

ITEMS OF INTEREST.

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VOL. XIII.

PHILADELPHIA, JANUARY, 1891.

No. 1.

Thoughts from the Profession.

COCAINE.

Cocaine is an alkaloid obtained from the leaves of the Erythroxylon Coca, a native of South America. It is met in various combinations, but it is in the form of the "hydrochlorate" that I intend to consider it, the other combinations possessing no properties which render them, in any sense, superior to the hydrochlorate. Dissolved in water, it is easily recognized by its peculiar bitter taste, and the subsequent feeling of numbness. It possesses powerful local, anodyne and anesthetic properties. Its employment by the dental surgeon is restricted to two methods; by local applications of strong solution, and by hypodermic injection. Applied locally, a ten per cent to twenty per cent solution can be employed, but when used hypodermically, the solution should never exceed ten per cent.

A twenty per cent solution, applied to the mucous membrane, on a piece of cotton lint, will prove of great service in wedging and separating teeth, in forcing the silk up in high conical edges, in removing portions of overhanging gum, in the treatment of "pyorrhœa alveolaris," in the lancing abscesses, and on many other occasions which will suggest themselves to the operator as occasion requires. Also a few drops on a piece of cotton lint applied to a carious cavity will enable us to determine the seat of a probable exposure, and, when found, to enlarge that exposure, and permit of the escharotic accomplishing its work of destruction with a minimum amount of discomfort. Then, too, in single-rooted teeth, it is very often possible to painlessly extirpate the pulp. Again, in the treatment of those teeth in which the periosteum is so acutely inflamed as to permit of no manipulation, we shall often find a

twenty per cent solution applied to the gum, will in a few minutes greatly lessen the sensibility of the tooth, and will enable us with little discomfort to our patient to open up the canals and dress them. Lastly, in the taking of impressions in the mouth which exhibit such an intolerance to the introduction of all modeling materials, painting the palate with a five per cent solution will in nearly all cases enable us to obtain a good impression, without producing that retching, so distressing to the patient and so annoying to the operator. We shall, of course, find this treatment invaluable when we desire to obtain an impression of the soft palate, or where from any cause there is special sensitiveness.

While local applications of strong solutions to the mucous membrane are always of great service, it is in the hypodermic injection that we shall see to best advantage the anesthetic properties of cocaine. But the successful injection of cocaine for purposes of tooth extraction, presents no little difficulty to the dental surgeon. We are dealing not only with surrounding soft tissues, but have also to overcome the physical barrier presented by the alveolus, and some little judgment is required to bring the operation to a successful issue. We have not merely to inject the solution beneath the mucous membrane, but to so inject it, that it may penetrate the porous bony tissue, and embrace in its anesthesia the periosteum and nerves of the offending tooth. In fact, the injection requires as much care as the shaping of a cavity we are about to fill with gold. The syringe employed should work easily, and the needle be fine, sharp, and scrupulously clean. The introduction of a small fine needle will obviously occasion much less pain than a coarse one. The needle should be rendered thoroughly aseptic previous to each operation, and one of the most certain methods of accomplishing this is to draw up through the needle a few drops of strong carbolic acid. The solution we inject must be perfectly fresh, for as the salts of cocaine once in solution rapidly decompose, which without doubt accounts for many failures and unpleasant symptoms. For external application, a solution containing five per cent saccharina can be profitably used, as this not only overcomes the unpleasant bitter taste, but prevents decomposition.

The salt should be dissolved in water slightly warm, not hot; hot water favors a decomposition. The strength of the solution varies according to individual judgment, from four to twenty per cent. I have employed five per cent solution (one-half grain to ten minimis of water) in fifty cases with satisfaction. Previous to injection, the gum should be dried, and a napkin folded round to

exclude saliva. By this means we can see clearly if our solution remains within the tissue, and does not escape back into the mouth through the puncture. All air must be expelled from the syringe before using.

A few drops of a twenty per cent solution applied to the mucous membrane will render the puncture painless, and indeed, if we discharge one minim of the solution on the immediate entrance of the needle into the soft tissues, the farther introduction of the needle can be accomplished absolutely without the patient's knowledge. For extraction of a tooth it is generally advisable to inject in three places, and inasmuch as we shall obtain most of our anesthesia through the outer and thinner wall of the alveolus, two punctures should be made on the labial aspect of the gum, and the remaining one of course on the lingual aspect. The needle should be inserted about one-sixth of an inch below the free margin of the gum, and driven obliquely in a direction toward the apex of the tooth, until the mouth of the needle impinges directly on the bony tissue. Great care must be exercised to penetrate through all the soft tissues, otherwise the current of our solution will be misdirected, and we shall obtain an anesthesia of the superficial soft tissues alone, the periodental membrane and nerves of the tooth remaining uninvolved. The needle once in position, and a finger being placed on either side and pressed forcibly down on the gum to prevent any rising up of the soft tissues, the solution should be slowly discharged. A little resistance is often offered to the entrance of the solution, but a steady forcible pressure will generally succeed in driving it home. Almost immediately on the injection of the cocaine, we shall obtain a complete blanching of the gum in the neighborhood of the puncture, due without doubt to the contraction of the capillaries. The solution injected, the needle should not be withdrawn for a few seconds, and when withdrawn, a finger should be placed over the puncture to prevent any escape of the solution. The full anesthetic properties of the cocaine are not obtained for six or seven minutes; we must therefore allow that time to elapse between the injection and the operation. It is generally advisable to place a few crystals of the salt just around the neck of the tooth to render painless the driving up of the forceps. The most convenient form of the hydrochlorate of cocaine for the purposes of injection is that of the compressed tabloid—half-grain tabloids can be obtained at all the depots, by the employment of which we are spared all trouble of weighing and they easily dissolve.

Dr. Arthur O. Gask, England.

DENTAL EDUCATION.

Dr. C. N. Peirce, of section two of the American Dental Association, at its last meeting, reported: The rapid multiplication of dental schools in the United States involves a question which is menacing the future prosperity of the dental profession. The results in all probability will be similar to those suffered by the medical schools of this country, who turn out annually, to prey on an unsuspecting public, a number of men which largely exceeds the graduates in Great Britain, France, Germany, Italy and Austria combined. This has been carried to such an extent that the medical graduate is the laughing-stock of his trans-Atlantic confrère. They now swarm in such numbers in the United States that one out of every six hundred persons is a medical graduate. At the present rate the dental schools of the United States will soon equal, in fertility at least, the medical colleges of this country.

While eventually the subject of education will probably be under national control, means ought even now to be adopted to check the rapid increase of so-called colleges. Possibly the only remedy at present lies in the amendment of State constitutions, so that at least none but "reputable and capable" men may be able to secure articles of incorporation. In one State the incorporation of dental colleges and infirmaries is almost co-equal with the issuance of dog licenses.* We offer no special remedy, but hope members of the association may reflect on the question and be prepared to adopt some means to check the evil before its serious consequences become more marked. To one subject we would direct attention: There is to-day, in the literary and scientific elements of society, an effort to establish a National University at Washington, D. C. As that idea matures, those interested in the progress of dentistry should be on the alert and see that our profession is there represented.

The advantages offered for the establishment of such an institution in the capital of our country are too patent to be overlooked. First the climate for eight months in the year is hardly surpassed in our borders. It is the home of men of talent—students of profound and varied ability—and of institutions such as the Smithsonian, National Museum, Government Surveys and Commissioners, American Medical Museum, Philosophical societies, National geographical, agricultural and chemical libraries embracing over 1,000,000 volumes, and laboratories embracing illustrative material in every department of medicine and surgery.

* Illinois, for instance.—ED. ITEMS.

With anxiety and interest every earnest member of the dental profession is looking to the action of the "National Association of Dental College Faculties." The adoption last year by that body of a resolution requiring all schools connected therewith to adopt a three-years' graded course of not less than five months for the session of 1891 and 1892, to be continued thereafter by all such schools, was certainly a forward step, which, it is to be hoped, will be fruitful of much good. That this step shall be maintained, so that the profession may reap the benefit of this united and progressive action, depends largely on the State Boards of Dental Examiners and the encouragement they receive from the National Board of Examiners. It is easy for schools to obtain representatives in the Association of Dental Faculties, and advertise in their announcement that their requirements are consistent and in accord with said association, and subsequently in the admission and graduation of students to ignore every vital principle therein involved. The State Examining Boards are the only power capable of correcting this malfeasance, and unless they are willing to exercise this power the resolutions proclaiming this advance in educational institutions are but blots on their books, and as worthless as a discarded garment. It is well known that a prominent school has so advertised its accord with the association of faculties, and at the same time has violated the latter's requirements when a few students were to be gained, and yet their diplomas have been endorsed as freely as those from schools where every letter has been conscientiously adhered to.

Since the last meeting of this body, three States, Mississippi, New Jersey and Minnesota, have so modified their dental laws as to require an examination and endorsement of all who intend to practice within their Commonwealths, without regard to where the graduates' diplomas were acquired. Massachusetts had three years previously passed such a law, thereby inaugurating a step which your chairman of the section believes to be in the right direction. State Boards of Examiners share with the faculties an important responsibility, and such action on their part must prove a great incentive to students to be thorough and well-grounded in principles and practice. Of course the value of this State Board examination, as well as its justice, depends on the qualifications of those conducting it. It is not enough that the members of this Board of Examiners enjoy the emoluments of a large and remunerative practice, or that they be held in good repute by their neighbors, and have the degree of D.D.S. previously obtained from some college. Any one or indeed all of these are not necessarily qualifications for the proper performance of such a function. The qualifications of the

State *critic* or *examiner* must depend on judgment. This judgment must be ripened and trained through first-hand knowledge, knowledge the result of practical experience and experimentation.

One with a very limited experience may judge of the density and finish of a filling or a piece of prosthetic dentistry, but may be very poorly qualified to criticise the appropriateness of the one or adaptation of the other. An eminent professor has said, "Our knowledge of the universe depends on our contact with it, and may be expressed in what we call science." So one's knowledge of dentistry depends not only on his familiarity with the materials used, but also on the knowledge possessed of the tissues or organs on which the operations are performed. So, just in proportion to the extent of this knowledge gained from contact, is the knowledge of the science of dentistry broad or narrow.

If it was only practical skill, or skill in technique that was required, the student need not go beyond the preceptor's office and laboratory; but fortunately our colleges are instituted for a deeper and broader purpose. The forces of nature as embraced in biology, chemistry, metallurgy, etc., should be and are taught in our best schools, as much of necessity in the lecture-room, clinics and laboratory, as of the more simple mechanical processes. The pertinent question now arises: How many of our average practitioners, whose graduation dates back *five, ten, fifteen or twenty years*, of whom our examining boards are composed, are qualified to judge of more than the superficial qualifications of the student; and how often is injustice done the applicant through their ignorance and inability to open the recesses of valuable information? The advantage which is to be gained in the prospective three years graded course soon to be adopted by our schools, is the opportunity for additional scientific training which it offers.

Four years ago when your chairman of section two had the honor of holding the same position, he prepared a paper looking toward a higher standard than the degree of D.D.S. now conferred by the colleges. It was at that time deemed by the section premature or eutopian; but now the same ideas are accepted by the section as worthy of voice, and are as follows:

In view of the fact that a large proportion of our dental schools are dependent on the class in attendance for support, and that the compensation to professors and demonstrators has a like sustenance, the temptation is constant to increase the class beyond capacity for instruction, and to estimate its value by numbers rather than quality. To such an extent has this been true in the desire to excel by publishing a large graduating class, that a prominent school, two

or three years ago, graduated the same five students two successive years. To express the condition of our educational institutions tersely and in a few words—we should say, that under the present organization of a large majority of our schools, the tendency is to insufficiency rather than proficiency, to superficiality rather than solidity. Therefore we deem it an imperative necessity for growth and proficiency that there should be established a higher standard than is now required by any of our dental or medico-dental schools. And that this association now in session should, before adjournment, appoint a committee of five to consider the advisability of establishing a National Board who would be clothed with power to confer a title or degree on those members of our profession who had attained a well-rounded degree of proficiency by experimental and true scientific work to make them worthy of such distinction. The object of this action would be toward a broader and more liberal education in everything that pertains to the profession of dentistry.

—*Dental Review.*

REFLEX NEUROSES ASSOCIATED WITH THE TEETH.

[From a lecture before the Practitioners' Class in the Chicago College of Dental Surgery.
Reported by the *Dental Review.*]

Prof. Brubaker, of Philadelphia, says:

1. A pain in a tooth no means indicates that the tooth is the source of trouble; it may be in another tooth, or in other tissues near or remote.

2. Dental disorders may induce pathological conditions in other parts of the body, or in nervous structures themselves, without the existence of any subjective intimations of pain in the teeth on the part of the patient. In other words, one may have toothache in the brain, the ear, the stomach or the hip-joint, or one may have headache, gastralgia, and other disorders manifested in the teeth.

A centripetal or afferent (sensory) current travels from an irritated point toward a center, and re-appears as a centrifugal impulse which excites activity either in muscular, glandular, vascular or secretory tissues.

The central nervous system (and especially the medulla) he compares to a sort of intricate switch-board of a large telegraph office, where the many wires are focalized. When in normal action, the connections are such that a message from any peripheral point is conducted to its proper receiver, transferred to another wire and sent into other and higher offices. Now, most of the pathological instances gathered here seem to be the result of a disordered state of affairs in the switch-board, viz., the medulla oblongata. As far as concerns any adequate comprehension of the mysterious workings of the medulla, either in health or disease, we are very much like an individual wholly ignorant of, and standing before, the switch-board and the unheard-of-telegraphic machines.

Another author gives as a definition of reflex action "the propagation of an impression made on the extremity of one nerve, to the extremity of another, through the invention of the nervous centers." And, once more, we have *reflex pain* defined as "that

which originates in one locality, the sensation passing back to a nerve center, and from there reflected along the line of other nerves centering in the same ganglion."

How is the painful sensation transmitted? Martin, in speaking of the nature of the nervous impulses, says:

We cannot well imagine it anything but a mode of motion of the molecules of the nerve fibres; but beyond this hypothesis we cannot go far.

Another author says:

All these operations proceed on the principle of contact; it is all a subject of touch; the sensitive cell is simply the ultimate cell exteriorly of a series of cells; it is the extreme end of a nerve filament. The first cell being touched, touches the second, the second the third, the third the fourth, and so on till the central cell is reached; all done in an inconceivably short space of time. It is touch, vibration, modified tention, as you please to name it.*

In the preface of a recent work—"Hand-book of Treatment," by Professor William Atkin, M.D., Edinburgh—we read: "There is, perhaps, no more striking characteristic of the medical practitioner of to-day, and none better illustrating the pervading spirit of the age, than the universally-observed tendency * * * to shun the unrealities of theoretical discussion and to appropriate with avidity *facts* which he can instantly transform into working force." In a direct line with this thought, I cite a few illustrative cases, where dental lesions have provoked disturbances in other parts of the general system, on the one hand, and where systemic affections have manifested their effects in the dental organs, on the other.

It is almost a daily occurrence, with every dentist having an ordinary practice, that patients present themselves complaining of the "toothache," and locate a pain in a tooth other than the one causing it. Unfortunately, many valuable teeth are sacrificed, causing both disfigurement and discomfort to the patient, by overlooking the possible reflex nature of the pain, in the diagnosis. From the fact that the *offending tooth itself* may give forth no painful sensation, the diagnosis sometimes becomes complicated; a very careful search about *every* tooth (both above and below on the side of the face affected), particularly on the proximal surfaces and under the free margins of the gums, using very fine-pointed exploring instruments and illuminating the oral cavity with the mouth-mirror, will usually disclose the origin of the trouble. Tapping the tooth (percussion) with a steel instrument is often a valuable aid in a diagnosis, especially where there is peridental

* It is an interesting fact that "the rate of transmission can be measured in several ways, and is far slower than that of electric current. In man it is 108+ feet per second about 1:10 of the rate of the transmission of sound-waves in the air at zero. In the motor nerves of the frog it is 94 feet.

complications. Besides the attempt, by patients, to definitely locate the pain, it is almost as frequent that the complaint is spoken of as "*new-ral-a-gy*," sometimes referred to the ear, at others to the orbital region, to the eyeball, to the entire side of the face, etc.

From the recorded observations of various clinicians, no doubt remains that dental irritation may give rise to neuralgia in many nerves, and more particularly in the branch of the trigeminal itself. The peripheral irritation in such instances, after being reflected to the nerve centres, instead of passing over to adjoining *motor* centers, induces some pathological condition in the nervous structures themselves, which manifests itself as pain.

Whatever the pathology of facial neuralgia may be, it seems unquestionable that the disease may be caused by dental irritation, and in such instances often cannot be distinguished from a neuralgia induced by any other cause.

In several papers by Neucourt, published in the *Archives Générales*, from June, 1849, to December, 1853, he cited seventeen cases, and laid down some rules for diagnostinating a neuralgia of dental origin. Very briefly they are :

1. When a tooth is in itself the seat of pain, and the patient *definitely specifies* it as such, there can be no doubt that it is the origin of the disorder.

[This is not always the case, as will be seen further on.]

2. Should there be an addition to the pain, swelling and inflammation of the cheek with indications of abscess, or the tooth painful to percussion, or seems longer than the others, the indication is decisive.

3. Even if the pain is diffused over the side of the face and presenting all the typical signs of neuralgia, nevertheless, if it eventually localizes and limits itself to the region of the dental arch, accompanied with pain, redness and swelling, with extreme sensibility to pressure, indicating a *possible* termination in the abscess, such a disturbance is of dental origin.

4. A distinguished mark of dental neuralgia is the persistent discomfort of the patient; while in neuralgia from other causes there are periods of calm.

Friedburg (cited by Brubaker) has reported in detail (Virchow's *Archiv*- Band XVIII.) several typical cases of neuralgia caused by dental irritation. Here is a specimen :

A patient, aged thirty-seven, a working woman, began to be troubled with pains accompanied by swellings in the finger joints. She attributed them to washing in cold water. Sometimes the pains extended up the arms, even to the shoulders. After two or three years of this misery, oft-repeated attacks of neuralgia in the left side of the face supervened, with prickling, burning and darting pains, which shot from beneath the ear through the cheek and temple. At times the eye and forehead seemed to be the seat of the assault; then they were specially severe. She did not know whether the *teeth themselves* ached during the attacks or not, but was positive the beginnings of the seizures were *not in them*. After suffering for five years with variable periods of freedom from the attacks, sometimes as long as two weeks, the extraction of the cuspid and third molar of the upper jaw, which were carious, gave instant relief, and the next day she reported the first night's rest for a long time. The cure was complete.

The remaining cases present similar details ; one covering the period of a year, and others several months each. The muscles of the face, the eyelids and lips being seized with twitching, were the peculiarities. In one, memory began to fail and the general health gave way ; but in *each*, the extraction of affected teeth or diseased roots, was followed by a cure.

Neuralgia having its *origin in the teeth*, does *not depend* on those organs being *carious*.

Dr. Alfred Gysi says, where the patient had suffered several weeks with excruciating pain in the right upper maxilla, the pain radiating at intervals all over that side of the face, several carious teeth were removed in the hope of relief, without effect. She concluded, as so many of her teeth were lost, to have the right central incisor (which was quite isolated) removed for the purpose of wearing an artificial denture. Though this tooth showed no signs of decay or exostosis, its removal was followed by instant relief. A microscopical examination of it showed the presence of six nodules of secondary dentine, projecting from the walls of the pulp canal, materially diminishing its calibre and compressing the root portion of the pulp.

Hypercementosis (dental exostosis, excrementosis) is also another source of neuralgia. This excessive development of the cemental tissue "cannot be called a common one, but is too frequently met to be considered rare."

Its growth is slow, and probably in very many cases, its presence is never known or suspected ; but in others, there are instances where serious results have been reported. Prof. Frank Abbott, of New York, relates a case where a patient suffered for ten years with neuralgia on both sides of the face, and had submitted to the severance of both facial nerves, at different times, once in London and once in Paris, without relief. Finally, her dentist located the cause of her distress in one of her teeth, which he removed, with the happy result of immunity from further trouble.

Prof. S. A. Guilford, of Philadelphia, relates a somewhat similar instance where the patient had suffered many years.

None of the teeth had lost their vitality, neither was there soreness. At last hypercementosis was suspected, and one of the lower third molars was extracted. An almost complete cessation of pain followed.

A far more serious case of disturbance is mentioned in the Proceeding of the Buffalo Medical Association. A gentleman had for years suffered from what was called neuralgia, and finally became insane. In the course of time he was brought to his dentist for

the extraction of a tooth, which was accomplished only after using extraordinary force, when there was found on its roots an abnormal growth near the crown. The neuralgia ceased, and soon the patient was restored to sanity.

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ADMINISTERING ETHER AND CHLOROFORM.

As far as I know, the following method is original with me, a full description of it was published in the *New York Medical Journal* of November 20, 1886, page 573. The great trouble in administering ether is at the beginning to give sufficient air with the ether so as not to strangle the patient, and then, as soon as the patient gets accustomed to the ether, to give only the ether vapor. I have overcome these objections. I simply use a large towel folding it first four times lengthwise and placing a paper the full length between the outside folds, then I roll it up into a cylinder, the size to be governed by the face of the patient; you want it large enough to cover the face, and not too large. Now we have a cylinder open at both ends, full size. I then saturate the lower part of the cylinder that comes against the face with the ether, then apply it to the face; and, as the other end is wide open, the patient gets a great deal of air and also a great deal of ether vapor. A few breaths are sufficient for the patient to become accustomed to the ether. I then close the outer end of the cylinder, by bringing the sides together and holding them with my hand. The patient now only gets the ether vapor, and is very soon wholly etherized, and without any struggling or coughing. The average time generally taken to bring the patient under ether by this method is only two and a half minutes, and I only use one and seven-eighths ounces of ether. You can see what a small quantity of ether it takes. Now, chloroform I consider just as safe as any anesthetic, if you know how to use it. You must remember, it is powerful. It holds the same relation to ether that a powerful locomotive does to a small toy engine; and to use it, one should thoroughly understand this, and, realizing this, they will be able to have it wholly under their control. In administering chloroform, the average time is about the same as for ether, and the quantity three-eighths of an ounce.

The best thing for dentists to use is, I think, what is called the one, two, three mixture; that is, one part alcohol, two parts chloroform, and three parts ether. With this mixture it takes only two and a half minutes and only about three-fourths of an ounce.

—International.

ANCIENT DENTISTRY.

A curious old book has just come into our hand, kindly lent by Mr. Rutherford, which already in the year 1816 had reached its fifth edition. It is entitled "A Dissertation on Artificial Teeth," by M. De Chemant. Apparently its object was to act as a kind of advertisement for M. De Chemant, since his address is printed in a very prominent manner; indeed, he devotes a page to informing those persons who may desire to consult him on the subject of his mineral paste teeth that he would be obliged to them if they would, on the preceding day, make their appointment, etc. We fancy it would be a case of the "pot calling the kettle black" were we of this generation to find fault with this comely old gentleman (his portrait is given) for so doing. Unfortunately, it is now-a-days more the rule than the exception for those who rush into print to let their address occupy a prominent position in the book, though, perhaps, they do not so openly let the real why and wherefore of the book's appearance be seen.

The chief point of interest in the book centres in a sheet of engravings illustrating the various types of dentures which M. De Chemant was prepared to supply to his patients. Here is a porcelain bridge of ten teeth supported by four pivots by which they are fastened to the stumps remaining in the jaw. A single tooth for all the world like a Logan crown. A single tooth to be fixed by means of a small plate of gold, or, as we in this inventive age would say, a bridge for one tooth. A row of teeth to be supported by ligatures; this idea we would suggest to some of those inventive genii who are hard up for something to patent. We do not for a moment wish to detract from the merit due to those who work out original ideas, because some one else has done it all before. But does it not seem a waste of energy? Whether the fact be due to lack of reading on the part of the re-inventor or to our librarians letting their collection of books be but a miscellaneous heap of curiosities, not a classified collection with a general index and guide, we do not know. In one of the German Universities there is a general index to the whole library, from which a man can see at a glance what has been done in each branch of study, so that it is possible to continue a line of research from the point where the last man left off, without wasting time going over the old ground.

Very interesting it is to be brought once again in contact with the famous medical men of the beginning of the century. Here we meet John Hunter, who introduces De Chemant to one of his patients, and these six cases of transplantation followed by

“venereal disease” which led him to give up “this cruel practice;” also the “immoral Jenner,” in whose presence, and for one of whose patients, he removed fifteen or seventeen stumps, decayed even to the socket. We are also brought into the presence of such successful practitioner as Sir Walter Farquhar, M. Vicq D’Azyr and others.

M. De Chemant speaks of these teeth as his invention, and thus records the circumstances “to satisfy the curiosity of the reader:”

In 1788, when I exercised the profession of a surgeon, I was consulted by a lady who had fallen into such a state of weakness as produced considerable fears of her life. On approaching her I perceived a tainted odor, which I thought proceeded from her lungs, or her teeth, which were black. I examined her mouth, and was struck with the bad state of a set of human teeth implanted on the base of a tooth of the hippopotamus. This set of teeth being removed, I perceived her mouth to be almost entirely covered with small ulcers, and I had no doubt but that her disease was the effect of the putrid exhalations which proceeded from the set of teeth, and which corrupted the air she breathed; what confirmed this conjecture was, that after having laid these teeth aside, her health improved in a few days. Perceiving that this lady would not do without artificial teeth, I advised her to have several sets of teeth at the same time, so that she might change them often, after having washed them and let them dry. She did so, and her health became re-established in the course of some months.

But, as teeth of this kind require to be renewed frequently, they occasion a great expense, and, notwithstanding their frequent renewal, they always produce a bad smell. I was induced from that time to reflect on the possibility and means of making teeth and sets of teeth of durable and incorruptible materials. I examined almost all the substances of the mineral kingdom, and at length composed a paste which, when it is baked, has every desirable advantage.

Now, as a matter of fact, or rather according to Piggot’s “Dental Chemistry,” they were discovered by an apothecary of St. Germain, Duchateau by name. He wore artificial dentures of ivory and natural teeth, but found they rapidly became tainted by the various disagreeable odors emanating from his wares, the porous animal substances becoming rapidly impregnated by the effluvia. Mr. Guerard undertook to manufacture in 1776. Sets were made for various distinguished personages, but he failed for want of knowledge in the practical duties of a dentist. In 1788 Dubois Chemant bought the right and managed to attract the attention of the French Academy, who appointed a sub-committee to examine the teeth. This committee found various imperfections in the teeth, a fact which, by-the-by, M. De Chemant does not record in his book, and one of the members, Dubois Foucou, improved them very much. Practically, little alteration has been made in this substance even in modern times.

ITEMS OF INTEREST.

DIRECTIONS FOR WORKING ALUMINUM.

The following directions are given by the Scovill Manufacturing Company, Waterbury, Connecticut:

A cubic inch of pure aluminum weighs approximately one-tenth of a pound avoirdupois, being about one-fourth the weight of an equal bulk of pure silver.

Pure aluminum can be rolled, drawn, spun, stamped, engraved, burnished, polished and soldered to the same extent and by the same processes as used on brass, with the following exceptions:

ANNEALING.—A very low and even temperature should be maintained in the muffle. Aluminum melts at about 1300° Fahrenheit—a very dark-red. The inexperienced, therefore, cannot judge the proper annealing temperature by the eye alone, without danger of fusing the metal. When the metal has been heated enough to char the end of a pine stick, thus leaving a black mark in the wake of the stick, as it is drawn across the metal, it is sufficiently annealed. The metal should then be withdrawn from the furnace and allowed to cool slowly in the air. For some work, such as stamping and drawing, it is sometimes better not to heat the metal so hot as to leave a dead black mark with the stick, but just enough to show a dark-brown mark instead. Very thin sheets of wire can be annealed sufficiently for some purposes in boiling water.

DIPPING AND PICKLING.—Remove the grease and dirt by dipping in benzine. To whiten aluminum, leaving on the surface a beautiful white mat, dip first in a strong, hot solution of potash, then rinse in water, and dip in undiluted nitric acid, 42° . Then wash in water, and dry as usual in hot sawdust.

POLISHING.—Use fine white polishing composition or a rouge, and a rag buff.

BURNISHING.—Use a bloodstone or steel burnisher. For hand burnishing, use either kerosene oil or a solution composed of two tablespoonfuls of ground borax dissolved in about a quart of hot water, with a few drops of ammonia added.

For lathe work, the burnisher should wear on the finger of his left hand Canton flannel, keeping it soaked with kerosene, and bringing it in contact with the metal, applying a constant lubricant.

Very fine effects can be produced by first burnishing or polishing the metal and then stamping it in polished dies, showing unpolished figures in relief.

SCRATCH BRUSHING.—Polish or burnish the surface, and then use a fine steel scratch brush.

SOLDERING.—A special solder is necessary. Cleanse the metal

from grease and dirt. Use for soldering fluid Venetian turpentine. Place the solder on the metal with the Venetian turpentine, and heat gently in a blow-pipe until the solder is melted. It will then be found to have fixed itself firmly to the aluminum.*

CASTING IN SAND.—Use open but very fine sand, and bake the mold. Large feeding-gates should be provided, and the mold should be well vented. Pour the metal quickly, at a temperature but a little above the melting point. Use either Taylor's or Dixon's plumbago crucibles.

MILLING, PLAINING, AND TURNING.—Use plenty of oil to prevent the clogging of the tool and to make it cut smooth.

PRACTICAL SUGGESTIONS.†

Few men attain the high standing they aimed at when joining our ranks! What is the reason? Are they fitted for the occupation they have chosen? It is said, "Be what Nature intended you for and you will succeed, but be anything else and you will be worse than nothing." Is that the case? I think it is in some respects, but I believe what they lack most is will power. There was never a time in the history of the world when force of will was more necessary to succeed than now. Every kind of business is overdone, and our profession is crowded. The only way in which we can hope to succeed is by the greatest patience and application. What most men need is a purpose, the will to labor. He who would keep up with his fellows, must think and act quickly. Our calling is filled with keen-witted men; we must keep our eyes open, and be on the alert, or we will be distanced by our competitors. Avoid indolence, and fill up all the spaces of time with useful employment. Those who are the most persistent and work in the truest spirit will invariably be the most successful. If we make a success in life, it is due to nothing but industry. Even the simplest art cannot be accomplished without it. One of the most important things to consider, is our dental office. It is there we pass the best part of our life. Our failure or our success in a business way depends more on our surroundings than most of us are aware. Intelligent and cultured people look to the environments on entering an office when calling to make the first appointment,

* A good solder, M. Bourbouze states, is 45 parts tin, 810 aluminum. For dental work Schlosser recommends these two:

Gold, 30 parts.

Silver, 20 parts.

Platina, 1 part.

Aluminum, 100 parts.

Gold, 50 parts.

Silver, 10 parts.

Copper, 10 parts.

Aluminum, 20 parts.—ED. ITEMS.

† Read before the Missouri State Dental Association.

and your ability as a dentist will be very correctly gauged by their first impression. It need not necessarily be furnished expensively. The one thing needful is to have it clean and neat in every detail. It should have a pleasant, inviting appearance, and tastefully arranged. This has an elevating influence on the character and disposition of the dentist. He is inclined to be more cheerful and patient with nervous and exacting patrons. Do not be afraid of spending too much money in furnishing your office. It will be a good investment. I never saw a clean, well-arranged dental office but the dentist himself was neat and particular in his appearance, and also a first-class workman. I can always tell what kind of a dentist he is by his office, or the kind of an office by the dentist. We ought not to consider this subject in regard to a well-kept office of little importance. It will always bring a better class of patients who are willing to pay the price we ask, and this is a stimulant for us to excel in each succeeding operation. It is a duty we owe to the profession to do all we can to improve ourselves and our surroundings.

Before beginning an examination, or operation on the teeth, always wash your hands, and be sure your finger nails are clean. Unclean finger nails are disgusting under all circumstances. Always use a clean napkin or towel for each patient. Always use a new piece of rubber-dam for each patient at every sitting. Do not save the same piece to be used at the next engagement. They will have their doubts about its being the same one they had before. It makes a bad impression and adds but little to our profits at the end of the year. Always use as thin rubber-dam as possible. Use fine floss silk, or linen thread well waxed. Soap the dam where you have punched the holes for the teeth; you will be surprised how easily it is adjusted where the teeth are crowded. Use cocaine on the gums around the lower teeth. The patient will lose all dread while applying the dam, and in finishing proximal cavities the operation will be painless. Always dry the cavity before commencing to excavate, to enable you to see in what direction the decay has extended. All operations should be made as painless as possible.

There are a great many different formations of teeth, from the strong, hard and well-developed, to the soft and chalky, where the enamel seems to crumble away at the least touch. In filling, always use the material that will preserve the tooth the longest. Keep this in mind, and always work for the good of your patrons, and not for the most money to be obtained from the operation. In a great many cases, plastic, for filling, is far better than gold. Speak well of your competitors, especially if they are in good standing. Do

not use the letter I too often, as some of us are in the habit of doing. You will not be thought any the wiser for it. Never lose your temper; it belittles you in the estimation of others. Be gentle, firm and kind; answer all useless questions, regardless of what they are. In closing, there can be no truer utterance than this, "What a man does is the real test of what a man is."

Dr. E. E. Shattuck, Kansas City, in Archives.

INDIVIDUALISM.

Individualism is not eccentricity; it is not mere singularity; it is not coarse ambition. Scientifically considered, individualism is the higher evolution of the atom or unit; viewed from a social standpoint, it is a process of intellectual development by which a man is marked out from his fellows. Individualism implies concentration of thought, tenacity of purpose, and a strong sense of self-reliance. It is the religion of the strong man, the master principle of his whole existence.

The greatest enemy to individualism is laziness, and those who know anything of human frailties will, I am sure, bear me out when I say that "mental" laziness is far more common and far more difficult to overcome than that of the body. It is so much easier to accept dogmatic teaching, and to shift the responsibility of our views on others, than to concentrate our thoughts and work out the lessons of our own observations. It is much more pleasant to butterfly from theory to theory than to seek truth with patient tenacity. Why trouble ourselves to learn self-reliance, when natural indolence protests against the sacrifice? It is easier to imitate than to originate; plagiarism and mimicry are prominent features in our lives. Genius is the highest product of individualism. While few human beings reach genius, no human unit is without his share of individualism. The more I study the life of a so-called genius, such as Hunter or Newton, Faraday or Darwin, the more I am struck with the great work they contrived to compress into one short life.

I am firmly persuaded that no student has reached the first stage of progress till he has subordinated reverence for great names to a profound respect for his own individual opinion. Pray do not misunderstand me; I am not advocating disrespect for our teachers, but I would rather a student formed an erroneous diagnosis and stuck to it, provided always he could give me his reasons for having formed such a judgment, than that he should accept my dictum as a teacher without challenging me for the grounds on which I ventured to differ from him. A man has made a tremendous stride

when he has learned to have the courage of his own convictions; he has passed the rubicon of his career, when, for the first time, having honestly formed an opinion and adhered to it, the sequel proves he was right and his teacher wrong. The student who believes in his own opinion will take trouble to perfect himself in those means by which alone he can arrive at a correct judgment; the student who begins by criticising his teacher's diagnosis will find more and more that his view coincides more and more frequently with his teacher's.

I cannot resist pausing here to express my regret that the modern system of medical examinations handicap our students heavily in the development of individual thought. Mr. Edmund Owen, in his recent presidential address to the Harveian Society of London, humorously compared the head of a student of average ability to a quart pot, and bitterly complained that the examining boards expected it to do the impossible feat of containing and retaining three pints—one of medicine, one of surgery, and one of midwifery. He pointed out, too, that the usual way out of this difficulty was for the student to go up and empty out his pint of surgery, coming down again for the remaining quart of medicine and midwifery. Paradoxical as it may seem, I must express my conviction that the three pints could be easily accommodated in the quart pot, if the three liquids were not so frightfully adulterated with useless theories and vexatious hobbies.

It largely depends on the quality and nature of the final examinations whether our men are turned out overstocked repositories of examiners' special fads and gifted exponents of the latest passing theory, or whether they be men trained in the habit or exact thought and rational practice, gifted in the use of the stethoscope, the scalpel, and the other armamentarium of their craft.

—*M. Handfield Jones, M.D., in British Journal of Dental Science.*

A LOW FUSING CONTINUOUS GUM.

At the annual meeting of the British Dental Association in 1887, Mr. Cumming read a paper with the title which fitly describes the subject of my present demonstration, viz.: "Continuous Gum Work with any Form of Make of Tooth." The novelty of Mr. Cumming's method consisted in his baking the ordinary artificial gum on platina base apart from the teeth, which might be of the ordinary variety, and were finally mounted on a metal or rubber plate by the usual process of vulcanizing. The whole process seemed to me so complicated that it presented little, if any, advantage over the ordinary method of continuous gum work. I

admit that this conclusion may have been erroneous, but do not think that even the inventor will deny that his claim, that it should be the *coming* process of continuous gum facing, has been realized. The numerous favorable comments, however, on the specimens then shown, warrant me in believing that you will regard the process I am about to describe with even greater interest, since it achieves all the objects of the Cumming method in a simple way.

A reference to the formula for continuous gum work in that interesting chapter on molding and carving porcelain teeth in the American System of Surgery, Vol. II, shows that they consist of ingredients of very different degrees of fusibility, and it seems to me that such ingredients as cryolite, Bohemian glass, flint glass, and "white glass" are added, reducing the fusibility or acting as a cement to the more refractory ingredients, such as silica or quartz, kaolin and spair. I therefore instituted a series of experiments which may be briefly described as the very opposite, that is, adding the more refractory substances, which for convenience of discussion may be termed "tooth frit," for the purpose of giving stamina and cohesion to glass as a basis. Having satisfied myself as to the possibility of making an artistic and natural reproduction of gum color with mixtures of ordinary colored glass and vitreous enamels of various kinds, and also the possibility of controlling the fluidity, if I may be allowed the expression, of the molten glass, I found from a consultation of technical literature, which is woefully unsatisfactory from a purely scientific point, that as we would anticipate, there is a very considerable difference as to the fusibility and the solubility of the various kinds of glass. After various and prolonged experiments which it would be tedious to detail, suffice it to say I succeeded in turning out in this way an artificial denture of enamel platina which enabled me to approach one of the highest technical authorities, namely, Mr. Harry Powell, of the celebrated White Friars Glass Works, London, with a view to interesting him in my experiments. I candidly told him how provokingly unsatisfactory the technical literature had proved, and asked him to supply me with materials of known ingredients to replace the somewhat hap-hazard materials with which I had been working. In this way I was enabled to make very considerable progress, and after having satisfied him as to the utility of the process and the prospect that it might be of considerable usefulness, he very kindly placed his practical knowledge and technical skill at my disposal. By utilizing a formula for that Mosaic work for which this ancient house is famous, we have succeeded in producing a body and enamel capable of fusing at a relatively low temperature. I think you

will admit that, just as we match teeth, it will be almost as easy to match the natural gum which in different mouths presents an extraordinary variety of shades and appearances, from the pale anemic gum to that purplish turgidity not unfrequently found to be chronic in many mouths.*

After having referred to the extreme fusibility of this new enamel, you will doubtless be surprised that I mount on a highly infusible metallic base. The new materials may be fused on copper, dental alloy, and gold, but it was early discovered that there was so far only one material, namely platina, which was available, and it, for two reasons. First, during heating, chemical change takes place between one ingredient of the enamel and inferior metallic base. Alloy in 18-carat gold affects gum color, and so on any other dental metallic base but platina and pure gold. This change might possibly be obviated by using a glass which did not contain silicate of lead; but as there are other qualities to be considered, such as durability, strength, and solubility, we obtain a stronger material, insoluble, or at any rate practicable insoluble, in the mouth by keeping to the use of flint glass as the main ingredient.

Recent experiments on the behavior of this vitreous enamel on various metallic bases afford a reasonable clue to the cause of the change of color in the vitreous enamel. Some of my specimens prove:

- 1st. That on pure gold there is no discoloration.
- 2d. That on silver there is a yellowish discoloration.
- 3d. That on copper there is a black or greenish discoloration.

These facts seem to indicate, first, an oxidizing of the metal under the influence of heat; and secondly, the metallic oxide, thus formed, imparting its color to the vitreous enamel, either directly or by causing some further chemical change in the constituents of the vitreous enamel. We obtain so much discoloration, both from the copper and silver of 18-carat gold, as to preclude its use. So readily is the vitreous enamel discolored, that even on the pure gold specimen, the one or two tiny points where coin gold was used as a solder, or to close a small fissure in the plate, were distinctly marked by a deep green local discoloration on baking the body.†

Secondly, the co-efficient of the expansion of platina and glass being the same, platina must possess practically obvious advantages, especially as to adhesion, over any other material. If it is desired to give the platina the more acceptable appearance of gold,

* This new body may be had at dental depots.—ED. ITEMS.

† Why would not aluminum be the queen of metals for these plates?—ED. ITEMS.

it is easy of accomplishment, as, for instance, by electro-gilding. Another method, which is not uninteresting, is to make the metal base by sweating a piece of pure gold and pure platina together and rolling them out in the mills to the desired gauge, the enamel is infused on the platina surface, leaving an exposed surface of pure gold. Mr. Powell was extremely surprised to see the adhesion of the vitreous enamel on pure gold; though the attachment is not so strong as in the case of platina, it is evident by strippling we can get sufficient attachment for the purpose, though that statement may have to be revised later on, as no practical case on gold has yet been long worn in the mouth. On some dental alloys the enamel flakes off as the plate cools from the unequal contraction of the metal and the enamel. It is still necessary by this method to use pure gold for the soldering of the teeth to the platina base; but soldering, however, is not necessary. The teeth may be mounted as usual in wax on the metal plate, the case then set, teeth downward, on a base of plaster, sand, and fire clay, equal parts, the investment being carried over so as to embrace the tips of the teeth, to hold them in position. The wax is then removed in the usual way, and the body built up around the teeth. Though the enamel seems to adhere with tolerable firmness to the smooth platina plate, it is better to increase its attachment by either strippling the plate or forming a boundary for the material by means either of a turned-up edge to the plate, or, what I think is better, soldering a rim of triangular wire of platina with pure gold. The enamel is equally applicable to English and American teeth, the front teeth being American and the bicuspids and molars Ash's "diatonic."

For full, but especially for partial dentures, upper or lower, this new enamel seems to afford an important sphere of usefulness for the excellent English tube work. One reason why this work is so little employed is no doubt due to the fact that too frequently the dental mechanic is lacking either in the ability or in the patience requisite in nicely and accurately adjusting the tube teeth to the plate. This fine fitting of tube teeth, which occupies even in the hands of an expert the greater part of the time of manufacture, is entirely obviated by the new method of working it. The plate is struck up in platina, and, instead of gold, platina pins are mounted in the usual way, only soldered with pure gold. No fine fitting of the teeth to the plate is necessary, as the body does that more effectually than the most expert manipulator of the corundum wheel. The use of sulphur cement and the working loose of the teeth is also obviated, for they are held firmly in position by the body and the enamel. The general excellence of

ordinary tube work is further improved by the filling up of all spaces where food might lodge, without impairing in any way the utility and strength of the older method, the artistic coloring of the restored gum is, I think, a great advance on the often unsightly long-rooted tube teeth.

For small blocks of a few teeth, I think it is evident that the new method is of considerable utility and of artistic value. For small cases of bridge-work, removable or fixed, this enamel seems to have a great field of usefulness.

With regard to the process of firing, I have had great difficulties, as no existing form of furnace is found exactly applicable to the dimensions of the ordinary denture. If, however, the profession adopt this method of continuous gum work, such difficulties will be easily overcome.

As most of you know, annealing is important in the treatment of glass, even one to two weeks being deemed necessary in some important commercial products. This, however, is most essential where these products have to combine strength with thinness. Without trying any prolonged annealing process, we have so far found little difference in the appearance of crack in cases which have been slowly or quickly annealed. If the piece is allowed to be cooled down in the oven, it may be a distinct advantage to allow it to do so slowly. In that case, it is well to close the chimney, as that retards the process of cooling very materially, by preventing a draught of cold air through the furnace. A lower case I am wearing now, was simply allowed to cool down in the oven. The blocks of four teeth were slightly annealed by being allowed to cool down in cotton wool, and other cases by cooling down in the oven.

An effort has been made to more thoroughly anneal the upper case mounted on pure gold. After the case was sufficiently fired, the gas was turned down, so that it was retained for several hours at a temperature somewhat less than the firing heat, and then gradually allowed to cool down in the oven during the night. A more thorough annealing might be achieved by placing the case, after it had cooled sufficiently, in hot sand, hot plaster, or some hot fatty body, such as oil or stearine. Further experiments in this direction will be carried out.

Glass, as we know it, is usually fashioned into objects of extremely slender proportions, and so firmly imbued are we with the proverbial fragility of glass that it is not uncommon to find among the insane, that the afflicted individual imagines he is made of glass, and therefore he must not be touched, for fear of his breaking. Glass, however, is a material of considerable strength, but much

depends on the shape and form it takes. A material, therefore, which is utilized in the arts, for roofing houses and paving streets, must surely have sufficient strength to be judiciously applied to the requirements of the dental art. Some dentists and experts have predicted that this material will not last in a mouth. The almost universal receptacle for fluids of all kinds, whether acids or alkalies, is a bottle made of glass. To all practical intents and purposes, this new continuous gum is flint glass, and, therefore, I think the acknowledged fractional solubility of flint glass in weak alkaline solutions will not prove a serious drawback to the employment of the process.

The facility with which the enamel may be renewed and repaired is evident. With regard to the production of different colors, a very considerable modification of each color from a darker to a lighter shade may be obtained by means of rubbing down with a muller on ground glass, or the gum given a mottled appearance in other ways.

I do not suggest this new material as superior to continuous gum work, but it is capable of replacing with advantage to the patient and with facility to the dentist, even in partial dentures, some of the less artistic ordinary products of the dental laboratory.

—*British Journal of Dental Science.*

CAPPING PULPS.

My observation and my experience of twenty years in capping pulps have been good. I recognize the fact that my observation does not agree with many others, but it accords with some others or I should conclude that I must be wrong; and sometimes I get dejected and lose faith in myself and try some other treatment. I have made mistakes a great many times, but my practice of twenty years in capping pulps has been a very satisfactory one—quite as much so as that of filling of roots. If I had so much better success with devitalizing pulps and filling roots than with capping, I would say so. But I do not have that kind of experience. I think a tooth is much more comfortable with a pulp in it than without, and for that reason it should be preserved, if possible. I do not like to hear the practice of capping pulps abused, or the idea thrown out that it is a failure, when I know that it can be made a success. I like to hear the experience of practitioners, but I want them to be accurate and reliable; and not based on the recollections of patients as to what occurred fourteen or fifteen years ago; that kind of testimony is not of any value. *Dr. Crouse.*

THE USE OF CARBOLIC ACID.

Pure phenol, or carbolic acid made synthetically, was exhibited at the recent meeting of the German Apothecaries' Association. It is claimed to be chemically pure, and absolutely free from the impurities derived from tar, usually present in ordinary carbolic acid, from which it differs in the melting point, being 41° to 42° C. against 35° to 37° C. It boils at 181° C., taking the temperature of the vapor. It is anhydrous, a 5 per cent. solution of water being clear and almost inodorous. The *Pharmaceutical Journal* regards it of great value in the manufacture of salicylic acid, aside from the advantages derived from its purity as a medicinal agent.

—*Western Druggist.*

One of the advantages to be gained in the use of the synthetic product appears to be its greater solubility in water, thus enabling the operator to use it in greater strength without diminishing its causticity.

Carbolic acid has occupied probably one of the most important places in modern surgery—in fact, the Listerian system was founded in great measure on it. In dental surgery it filled a similar place. It has been used as an obtundent of sensitive dentine; as an ingredient of arsenical paste; as a disinfectant and antiseptic in various forms; as a component of pulp cappings; as a spray for the mouth and throat, to irrigate abscesses, and to open them; as a wash for the antrum; as a direct application to exposed pulps; as a dressing for root canals; as an astringent and stimulant, and as an ingredient for injection around the roots of teeth with camphor, menthol, potash, iodine, glycerine, tannin, and various other agents too numerous to mention.

A glance at the Transactions of Societies, and the pages of dental books and journals, will reveal the fact that of all remedial agents used by dentists since 1865, carbolic acid and nitrous oxide are the two that have been most written on. Many scientific men have studied it experimentally and clinically, and they are still engaged in the work, which indicates that in spite of laboratory work showing its weak points in bacteriology, dentists have blind regard for it, and it is their sheetanchor in so many phases of practice that they are not yet ready to abandon its use. I have had a warm interest in its use in the practice of dentistry; but I must, in spite of its laudation from so many sources, point out the reasons for its abandonment in some lines of practice.

First.—Destruction of the pulp. If a paste composed of arsenious acid, carbolic acid, and acetate of morphia is used on the

pulp, for its destruction, it will be found that the pulp will very soon begin to putrefy if left exposed to the ingress of saliva, even though tolerably well sealed with a sandarac, cotton, or other plug. Moisture is always deleterious to the integrity of a pulp destroyed by such a combination. We would use instead, the oils of cloves and cinnamon. The action of the arsenic on the life of the pulp is retarded by these agents, but when it is once deprived of vitality, its substance is so strongly permeated by the oils that decomposition does not supervene.

Second.—As a root canal dressing it is, on account of its solubility in water, absolutely unreliable, because of its easy disintegration by this agent. In addition to this, as I have frequently pointed out, it coagulates the surface of the animal matrix of the tooth, rendering it necessary to cut away the surface before root filling is attempted, if we desire to preserve the color of the crown of the tooth. It is self-limiting in a hard structure, and is not diffusible.

Third.—It is not a chemical disinfectant, when brought in contact with sulphuretted or phosphoretted hydrogen, only masking the odors instead of destroying them.

Fourth.—By its positive lack of diffusibility in dentine it prevents the destruction of absorbed septic matter and gases in the dentine of pulpless teeth, and thereby the object of using it is defeated at the outset. It is positively useless as an agent in the injection of blind abscesses, unless we seek to convert such an abscess into one of the acute variety.

Fifth.—Carbolic acid as a stimulant around the roots of the teeth by its superficial action, may be discarded from the list of valuable agents, unless it is first combined with camphor, glycerine, tannin, or an oil, to remove its causticity. Water always lessens the causticity of carbolic acid.

Sixth.—As an application to the pulp when exposed, its office is only transitory. If there be suppuration, it arrests it for the moment, but in a few hours it will lose its effect, and in most cases the pulp that we may desire to save will be irretrievably lost. If it be a fresh exposure, the necessity for forming an eschar does not exist, as it in no way simulates nature's covering.

It is an irritant escharotic, and is destructive. That so many pulps do live after its application, under such circumstances, only goes to show how nature may be abused and still preserve her vitality. It were far better to arrest the hemorrhage with an astringent, and place some non-irritating substance over the pulp than to run such risk as its direct application to the pulp.

Seventh.—As an agent for injection through the roots of

teeth to reach an abscess with a fistulous opening, it is valueless if there be fine roots that are not entirely free from fragments of pulp tissue, as it does not preserve pulp tissue even though the root and crown of the tooth be well filled with the best agents to be obtained for this purpose, *e. g.*, gutta-percha, oxy-chloride or oxyphosphate of zinc. It is a mistaken idea to suppose that an agent like carbolic acid, liquefied or diluted with water, will prove a permanent antiseptic in the presence of moisture, such as is nearly always present in a tooth. It does not possess embalming properties, because it is easily absorbed and disappears. It should form no part of root-filling, nor should it be introduced into roots permanently. Copal, Canada balsam, or other agents of this class, may be used on an exposed pulp in its stead, and for injection into abscesses, using the root of the tooth as a channel, potass-permanganate, silico-fluoride of sodium, boro-glycerine, the oil of cloves, cassia, cinnamon, myrtol, and agents of this class, are far more powerful, with better stimulating antiseptic and disinfectant properties, and they do not possess the coagulating property of carbolic acid, or its disagreeable odor, and under no circumstances will they clog a delicate canal or destroy the soft tissue to which they are applied. Carbolic acid should take its legitimate place as a spray, a local anesthetic and component of mouth-washes in dental practice, and as an adjuvant to the oils where local medication around the roots of teeth may be indicated, or for injection into the antrum of Highmore, combined with glycerine, tannin, camphor or potash, or be relegated to the laboratory as a component of sodium phenate, or in other of the chemical uses. *Dr. A. W. Harlan, Chicago.*

EXPOSED PULPS.—It has been the testimony of intelligent dentists that exposed pulps have been saved, notwithstanding the theories to the contrary. Clinical demonstration is the only way to settle the point at issue; if we never attempt to save a pulp, we have no opportunity of arriving at the truth. I want to say further, it is proper to save the pulp if it is proper to save the tooth. Let our object be to help nature restore rather than destroy. The practice of destroying pulps, as well as the practice of extracting teeth, has a bad hereditary influence. If we cap a pulp and the operation is unsuccessful, we have only a devitalized pulp—exactly what we might have expected if we had used arsenious acid. I believe it ought to be our province to save rather than destroy. It is questionable in many cases, which is the better course. I believe we should seek to preserve, but we need not look for uniform results, because we cannot find them.

Dr. Barton.

FRACTURE OF THE ALVEOLUS AND LOSS OF TEETH.

A gentleman called for some dental work for his wife. He casually remarked that he had sustained a very serious injury to his teeth and upper jaw. In March, 1887, while operating at a lathe table, a band flew off, striking the chisel which he held, knocking it from his hand upward, cutting through the lower lip, luxating the upper central and lateral incisors, and severely wounding the upper lip. The lateral was so completely displaced that the patient removed it and threw it away; he said the central was entirely gone, except some shattered pieces he removed with his finger. A physician was called, and diagnosed the case as fracture of the jaw attended with displacement of the teeth. He accordingly readjusted the parts to the best of his ability. But the patient became dissatisfied, as spicula of bone continued to come out for nine weeks, and a large lump remained under the lip, immediately beneath the right nostril. Three physicians, with several dentists, from first to last examined the injury, all of whom corroborated the diagnosis of the first. I found the parts had healed thoroughly, but there still remained a projection of the upper lip with a hard lump beneath, extending up to the nose. I suggested that it was the root of the missing central, which had been driven up by the force of the blow, and that, by making an incision, I could readily determine. The incision was made, which fully confirmed the diagnosis, and I removed the root of the central with a portion of the crown still remaining intact; the tooth had been completely turned crown upward, with the apex pointing toward the alveolar border. No doubt there was fracture of the process, and not of the bone, and had the case fallen into proper hands at the first, the lateral might have been replanted, as well as the root of the central, to which could have been adjusted an artificial crown, the parts readjusted and held in place by an appliance until nature could have repaired the breach, and thus given the patient comfort without the artificial appliance he is now wearing. *Dr. A. S. Willis, Newport, Tenn.*

EXTRACT OF HAMMAMELAS FOR THE GUM.—A patient who had lost all his upper and most of his lower teeth from Riggs' disease, and for which he had been treated by a noted dentist, has arrested further loss by the use of "Pond's Extract," simply rinsing the mouth daily with the clear extract. His gums are now in perfect condition. It was recommended to him by a friend who had used it for the same purpose.

L. P. Haskell.

WHAT IS HARD WATER?

Editor ITEMS: Water is "hard" when it is hard work to make a lather with soap. The distinction between hard and soft water is based on the action of water on soap. Soft water dissolves soap easily, and hard water with difficulty, varying with the amount of impurity present. The most common substances in hard waters are the salts of lime and magnesia. These decompose soap, forming a new salt with the alkali of the soap, while the stearic and aleic acids combine with the lime or magnesia to form the insoluble flakes which we find on using soap in hard water. The alkali used to soften water is carbonate of soda, which precipitates the lime and magnesia as insoluble carbonates no longer capable of decomposing the soap.

Dr. T. W. Wood, Jr., Boston.

FOR RIGGS' DISEASE.—No one remedy has proved so potent for good in the mass of cases as the sulphate of cinchonidia, emphatically advocated by Dr. Atkinson for the toning up of patients. Not only have I applied it personally, and to my family, but also to a large number of patients, so that it is digested knowledge. I know its value. Its powerful astringent effect impresses its influence on the nervous system by contraction and increasing the tension, so that the respiratory apparatus is made better able to perform its normal function, thus acting on the heart, increasing the propulsive power and forcing the nutrient fluids to the farthest extremities of the capillaries. Surgical treatment serves to *arrest the disorder*, and constitutional treatment to *hold it in check*. My preparatory treatment is the application of acid, both sulphuric and nitro muriatic, of such potency as, in my judgment, the individual case may require. These act as a caustic and serve both as an obtunder and an aid in the removal of deposits.

Dr. Geo. Mills.

DR. ELLIOTT ON ANTIFEBRIN.—At the time I took up this subject, six months ago, it was to me quite new; my attention was called to it by a physician who was using it very largely in neuralgia. In my opinion we have no remedy which approaches in value this agent. I have used it in fifty cases, and in forty-five of them have been successful; that is, in reducing within a few hours the pain of advancing periodontitis.

I always confine my treatment to two doses of ten grains each, and the pain is almost immediately relieved, and there are no ill effects from it as from the use of opiates.

AN ANOMALY.

If our beliefs of expectation are based on our beliefs of memory, and anticipation is only inverted recollections, it necessarily follows that any belief of expectation implies a belief that the future will have some resemblance to the past. So, in the continued recountal of peculiar dental anomalies, we see but a cropping out of a stratum presumably as ancient as antiquity itself. The description of these peculiarities, appearing from time to time in the much-prized ITEMS, are, doubtless, read with pleasure and profit. With your kind indulgence, I would like to add my mite.

On the thirteenth day of last October—a cold, blustering day—there entered my office a young lady, aged about twenty-three years, from whose mouth had been extracted the right and left upper lateral incisors. There was nothing peculiarly remarkable about the young lady, her attire being plain and in good taste, and her general demeanor indicative of culture; and, after examination, an impression was taken, the color of the natural teeth noted, and an appointment made for the following Wednesday.

The work was completed, and at the time appointed the patient, as I thought, presented herself. As before, she seemed quiet and reserved, almost taciturn. I imagined she looked younger than on the previous Wednesday. However, I gave this little attention. After divesting herself of bonnet and wraps, the patient took the chair as directed, and the denture was soon inserted, going nicely up to place and needing no subsequent attention. The lady's gratification was very evident and, with a smile, she paid her bill, readjusted her wraps and departed. Turning to my desk I hastily entered the account in my journal, and was just preparing to leave the office for the day when the bell rang, and my assistant ushered in the lady who had, as I supposed, just taken her departure. As she stood before me, minus upper lateral incisor, the effect was surprising; and still more so when a hurried dialogue of query and answer revealed the fact that the denture, which had been so successfully inserted a few moments since, had *not* been placed in the right mouth, but in the mouth of her younger sister, which was identical in contour and size, and from which the same teeth had previously been extracted. The outcome is the unparalleled spectacle of one artificial denture being alternately identified with the masticatory apparatus of two individuals. I have since learned that the resemblance between these two sisters, on one occasion, led to the extraction of an unoffending molar from the mouth of the younger sister, because the older one had been crying from the

aching of a similar tooth a few hours before; and not unfrequently, during their infancy, one would be deprived of her proper amount of nourishment for days, the other receiving double share under the impression that both were being treated alike, though it at first seems incredible that a mother should be unable to distinguish between her own offspring: *Dr. A. H. Brown, Aurora, Ind.*

A PECULIARITY OF NEW YORK PATIENTS.

A New York dentist says: There is not a city where women take such exquisite and sensible care of themselves as the wealthy women in New York. The beautiful delicacy of the skin, the erect poise and graceful carriage of the body, the glossy beauty of the hair, and the very whiteness and delicacy of the hands, with their carefully manicured nails, all testify to that state of absolute cleanliness which every one knows approaches divinity. But particularly, according to his idea, is this true of the care devoted to the teeth, where only the daintiest of utensils and the purest of dentifrices are tolerated. Really the wonderful progress of dentistry in the past few years is entirely owing to the patience and good sense of women, insisted the dentist. A woman will bear without a quiver the most intense pain, that would send a man flying out of the chair with a string of invectives that would make everything blue; and not only that, but she will submit to tedious operations that require hours of suffering in their completion. A man comes flying into the office and expects his teeth put in order in about the time necessary to black his boots. He fusses and fidgets, rushes off to keep an appointment before you have half finished, and you don't see him again for two or three years, when he comes in to cheerfully announce that dentists are of no earthly use, and his teeth are as bad as they would have been if you hadn't touched them. Now a woman sees to it that her teeth are kept constantly in order. In the first place she has the good sense to understand that she saves herself much pain and money by frequent visits to her dentist, and in the second place her dainty instincts prompt her to avoid the uncleanliness of decayed teeth. You can't help being a little more careful about hurting when a little, slim, delicate woman only shuts her hands silently under the torture, than when a big, powerful man kicks things all to pieces and splutters and fumes because you put a rubber-dam over his mouth. And you can't help doing better work for a rational, sensible woman who don't expect to be soothed into a siesta in a dentist's chair and sits still under the pain, than for a man who is never reasonable. No, I've no admiration

for the lords of creation (of which I am one through the dispensation of a Providence over which I have no control) when in the dentist's chair. I frankly admit that I cater to woman's custom, and am looking forward to the day when my pile will be large enough to warrant my writing under my doorplate, "No men need apply."

—*New York Sun.*

WHAT SHALL WE DO TO BE SAVED? *

My observation in the twenty-two or three years of my dental practice leads me to the conclusion that few of us, as dentists, have any appreciation, till it is too late, of the mental and physical strain under which we are laboring in conducting a large practice. The physical wrecks along our pathway will attest this assertion.

Our sacrifice for the health and comfort of our patients is never compensated by the small fees most of us receive. When we consider the peculiarities of our labor, is it any wonder the statistician writes us down as a profession low in longevity?

First, consider the twofold character of our work,—the mental and the physical. The body has to assume the most unnatural position, and be held there for hours at the most delicate kind of work, while the mind is being strained to its utmost to overcome difficulties. For none of us are so old or so perfect not to be confronted with those which test our skill and judgment severely, and even then the results are often unsatisfactory. Who among us have not imagined changes in the temperature of our offices as we overcome trouble or trouble overcomes us?

Inhaling the breath of our patients, taking into our lungs the carbonic acid gas given off from their lungs shortens our lives.

The influence of nervous patients, and especially children, who take hold of our sympathies, is another strain on our vital forces.

There is an unseen power, call it magnetism or what you please, that is one of the most powerful agencies for or against us.

With a strong, healthy patient, work, however tedious, does not seem to tire us. But a nervous, sensitive nature, will draw strength from us until, we find ourself completely exhausted.

And again, there is no calling in which a man has to depend so completely on himself. Assistants will not be accepted by our patrons. You have their confidence and *you* must do the work. Hence, the confinement of our daily routine work, without proper exercise, and our everlasting ambition for fame and fortune, is pressing many of our profession into premature retirement or early graves.

* Read at the Missouri State Association.

A dentist has so much and no more time and strength per day to sell; all he expends beyond that amount is a mortgage on the future store, and the foreclosure will be sooner than he thinks. It is with some admiration I look back on the good sense of our ancestors, who took things quietly, made money slowly, and were contented with a moderate fortune. When they had acquired the wherewithal, they bought a place in the country and lived like other country people. But now, the greed for gold is feverish. Money must be made at a rapid rate, and, when made, there is no craving for rest and retirement. But the excitement of society or foreign travel monopolizes our thought and time.

You will ask, Can I suggest a remedy? I answer, partly. My experience has taught me some ways by which *my* burdens are made lighter, though I must plead guilty of violating many of the laws of health in reference to my own practice. And hence I am trying to take these thoughts home to myself as I give them to you.

First, there must be daily exercise in the open air. This plain, common sense law of health is violated by me and by my professional brethren oftener than any other, and it is telling on us. The elastic step of health has given way to the plodding, measured tread of the toiler.

We need this daily supply of air to fortify us against the more vitiated air of the operating-room, that makes us logy and indifferent to our work. It takes from us an ambition to excel; we dread to see our patients come; and we go at our work from sheer duty.

Instruments and appliances can be made to lighten the labors of a dentist. Don't attempt to work with worn out or dull instruments. It only takes a few minutes to sharpen an instrument, and then how much lighter the work seems; and don't begrudge the cost of any that are improvements on what you have.

The *proper use* of the mouth-mirror will save more backaches than almost anything else in our office. My observation teaches me that many do not work through the mirror when operating on the lingual surfaces of the upper incisors, or cuspids, or the grinding surfaces of the upper molars and bicuspids. They contort their bodies into the shape of a corkscrew, assuming an ungraceful and uncomfortable position to both patient and self, by attempting to get a direct view of their work. While, with the use of the mouth-mirror, we can stand almost erect and, by moving the glass, get the view from every angle, and that magnified if so desired. I had many a backache before I learned how to take advantage of the means I had at hand.

C. B. Hewitt, D.D.S., Kansas City, Mo.

INSANITY FROM DENTAL IRRITATION.

Many cases have been reported, in which the mental faculties have lost their equilibrium from dental irritation.

The occurrence of insanity, as a result of irritation and pain caused by the eruption of the teeth, was first noticed and commented on by Esquirol. He says :

Among the subjects of lymphatic and nervous temperament, the pains of the first dentition sometimes become the cause of insanity. The appearance of teeth through the gums causes all the symptoms to cease. I have observed this in three girls.

Prof. C. N. Peirce, Philadelphia, speaks of insanity caused by the presence of pulp-nodules, the patient dying in an asylum.

Mr. D. Corbett (Int. Med. Congress, Trans, 1881, p. 475), cites a thirteen-year-old girl, of weak intellect, who became insane from overcrowded teeth, the removal of the first bicuspids on both sides caused a cure.

Dr. Tyler related two cases before the Boston Society of Medical Improvement, of mania from carious teeth, which were cured by their removal. And Dr. D. T. Pepper gives an interesting account of mental aberration from faulty condition of the teeth. The teeth were extracted, but a cure was not affected till after a portion of the inferior dental nerve a half inch long was removed, then the patient permanently recovered.

In the Dublin *Medical Press* is an account of a young man, aged eighteen, who committed suicide after four or five months' "excruciating torture from toothache." The coroner's jury gave a verdict of "suicide while laboring under a fit of temporary insanity."

Returning to the point of digression, I remark, that pain in different parts of the face and ears is often caused by inflammation of the dental pulp. The typical pain of pyorrhea alveolaris is not severe, usually, but is diffused to the cheek, molar process and temple.

Dr. W. P. Dickinson, Minneapolis.

EDUCATION AT OUR COLLEGES.—Dr. Truman said, at the last American Dental Association : What is the difference between the general modes of education ? We are passing into another system of training mind. We have a great deal of the didactic in teaching. Professors have repeatedly delivered lecture after lecture, year after year, from manuscript as originally prepared. This is wrong. There will never be much accomplished by placing an iron partition, as a written lecture, between teacher and student. Every

one fitted to train students should be able to stand before them and explain the principals as he understands them, and if he is not capable of thus doing he is not fitted for the position which he occupies. Therefore, every year makes a change in educational methods. I believe the time is coming when, instead of didactic lectures, we will have practical demonstrations of scientific results, and that the "mere talk," as it has been called, will be laid aside for the clinical demonstration. For more than a quarter of a century I have been a lecturer to students and am convinced that a more practicable way is desirable.

In reference to technicalities: There is a class of scientific men, and I have no criticism to make against them, who in their dealings with their special work so overload themselves with technical terms that they can never be clearly understood, even by those who are equally as advanced as themselves. To my mind the best teacher reduces everything to the simplest possible terms, omitting technicalities wherever possible. I know very well I have been subject to criticism both in this country and in Europe for this position; but I believe it can be maintained that if you want to instruct students you must do it in the simplest way, bringing your work before them in the plainest English at your command. I think this course should be followed in all our text-books.

COURTESY IN DISCUSSIONS.—It would be well to study the practical way of getting at our work. The prime effort to be crowned with success in all dental investigations grows out of respect for each other in our investigations, and the ignoring of all the littlenesses that are so sure to divide men, or at least to consume their time unprofitably. I have noticed that many have been so listless as not to have given attention enough to their own mental process to know which side of a question they were on, or whether they have comprehended what the question involves; and we observe this in very sharp men sometimes. Laying themselves under the ban of what Paul says, "He that answereth a matter before he heareth it, it is a shame to him." We are too apt to want foundation principles so fixed in our mind and formulated that they can be shortly stated, and that has been the effort of our investigators from the earliest time until now, under the ban and assumption of knowledge on the part of those having the field, out of which, thank God, we are growing. We are not bound now to point to our authority among real naturalists or true investigators in any department of scientific research. We take it for granted that all those who have enough illumination and growth in themselves to

have the desire to know, have had their strength developed and retained so that they state propositions that are satisfactory to their own minds, with such confidence that others will see and agree with them.

Dr. Atkinson.

DENTISTS NOT MANUFACTURERS.

The dentists throughout the country seem to be afraid that they will be misrepresented by the census office and will be classified as manufacturers under the eleventh census. In a resolution passed recently by the Philadelphia County Dental Society, it is claimed that "dentistry is a liberal profession and a branch of the healing art, and in no sense a manufacturing business."

On being shown this Superintendent Porter said: "I know that just as well as they do, and so far as the census office occupation tables are concerned, all dentists will be classified as professional men." He added that the objections which were being urged by dentists against including as manufacturers any part of their operations, seemed to arise from a misapprehension, or misunderstanding, of the real object or intention of the office.

It is not the purpose to include in the tables of manufactures all operations of the dental profession, but simply the operations of that branch which includes the manufacture of artificial dentures, such as plates, crowns, caps, etc., which are manufactured wholly, or in part, outside the mouth and afterward inserted. There can be no doubt that such features of the profession are clearly within the limits of the census inquiry relating to productive industry, and as such are, under the law, to be included in the tables of manufactures. To omit them would be doing a serious injustice to the industries of places like Philadelphia and other cities, where the branch of manufactures is such an important element. Not only so, but all this information was collected for the tenth census without a single complaint being made, and included such items as number of establishments, capital invested, number of hands employed, wages paid, materials used and value of products.

"I feel sure," added the superintendent, "that the dentists of the country, as soon as they understand the purpose of the office in this matter, will see that it is really to their advantage and to the benefit of their profession to answer the questions on the schedule sent to them, and in doing so they cannot in any way impair the high position they now hold among the professional men of this country."

—*Washington Letter in Philadelphia Inquirer.*

Monthly Gossip with Readers and Correspondents.

ITEMS, WITH COMMENTS.

A kind word is a cheap gift, but exceedingly precious. Gold cannot measure its value, neither can words utter it.

✓ Dr. W. H. Atkinson says that the best disinfectant is produced from a grain of bichloride of mercury in one ounce of hydrogen peroxid.

“No practitioner,” says Dr. A. W. Freeman, “can get along without four or five dental journals.” Of course not, if he wishes to keep abreast the times.

Just twenty years ago the first woman was admitted as a student in the University of Michigan. Now there are four hundred on the rolls in the different departments.

Robert T. Meires, M.D., of New York, publishes a scholarly article in the *Journal of the American Medical Association*, on “The Necessary Peroxide of Hydrogen.”

“A weak galvanic action,” says an exchange, “which will sometimes cure a toothache, may be generated by placing a silver coin on one side of the gum and a piece of zinc on the other.” What unmitigated nonsense!

In the preparation of amalgam for filling, all the mercury that is necessary is that quantity which will unite the particles together into a solid mass, without producing a soft surface when pressed into the cavity.

✓ Dr. B. Q. Stevens believes that the spirits of gum-camphor will remove all irritating or caustic effects of carbolic acid. Apply strong on cotton; or, if the burn be large, apply a paste made of the gum moistened with alcohol.

It is the opinion of Dr. Chisholm that “dental journalism represents the circulatory system which carries the papulum for upbuilding of the tissues in the professional body. It is indeed,” he says, “the life-blood of dentistry.”

“My daughter never uses slang;
She’s better taught than that,” said he,
“You’ll never use it, will you dear?”
“You bet I won’t, old hoss!” said she.

A remarkable surgical operation was performed in the Roosevelt Hospital, New York City, on the 25th ultimo. The case was one of cancer of the tongue, and the operation was for the

complete removal of that organ. The patient was a man sixty-five years of age.

"The human jaw bone," says Dr. W. H. Whitslar, of Youngstown, Ohio, "is the most difficult bone to hold in apposition during the process of healing." Correct; but did it never occur to you, doctor, that the jaw is a difficult member of the human anatomy to "hold" at any time?

"An endowment of fifty thousand dollars," says Dr. Wm. Conrad, in *Archives*, "will not issue permanently 1,500 copies of a 48-page monthly without the support and assistance of advertisers, subscribers and the profession generally." Dentists, without experience in the publishing business, can form no intelligent idea of the actual cost of a publication like the ITEMS OF INTEREST.

A course of lectures on law, by women to women, at the University of the City of New York, is an interesting event. The series was opened October last, by Mrs. Emily Kempin. Women are looming up in the legal, the dental and the medical professions, and many other fields of activity formerly monopolized by men. Instruction designed to prepare them for active work in either of the learned professions has a useful and commendable object in view.

The Central Dental Association, of Northern New Jersey, is of the opinion "that while instruments for the performance of surgical and dental operations may be patented, the operations themselves should never be patented." We have seen "operations" that it would hardly pay to patent; and if patented the patentee would never have occasion to prosecute for infringement. The "one dollar up" "dental parlors" of New York City are constantly turning out such "operations."

A beautiful young lady, the daughter of D. J. Jones, of 6941 Yale street, Englewood, Ill., recently died at the Presbyterian Hospital, Chicago, from the effects of chloroform administered for the painless removal of a small mole on her right cheek. It would seem that the time had fully come when the most searching investigation should be instituted in cases like this. There are too many deaths from the use of this drug—occasioned by ignorance or culpable carelessness of the administrator—to be regarded indifferently by the community.

Dr. L. Lewis, in the *Medical World*, contends that, "Fistulous openings in the cheeks, that produce a life-long disfigurement, might have been averted by treating the fistulous tooth that caused it. Skin affections and many diseases connected with the nervous

centres are frequently caused by dentition. In fact, nearly every organ of the body may be affected sympathetically by dental diseases. The delicate organization of the teeth renders them singularly liable to diseases that may influence the system, and, therefore, they should receive minuter attention from the physician."

"If you ever have been exasperated," says Dr. A. W. McCandless, "by a heavy mustache obstructing your view of the lingual aspect of the teeth, while endeavoring to remove deposits of calculus, a piece of rubber-dam over the lip and held back in the usual manner will make you happy." We have known, for a long while, that sentimental young ladies were often made happy on coming into possession of a nicely curled mustache, but that staid old fellows, of the gender masculine, could attain to this inexpressibly felicitous condition simply by an application of dam to a hirsute, fairly takes our wind away. Who wouldn't be happy at such a trifling cost?

Says the *London Medical Record*: "According to Voituriez, the anesthetic effects of carbonic acid, described by Brown-Séquard, can be obtained in an extremely simple manner by means of the ordinary siphons containing mineral water charged with gas. The anesthesia is obtained by projecting at a distance the contents of two or three siphons of seltzer water, limiting the application to the part to be operated on. The insensibility to pain lasts about five minutes and then slowly disappears. The method is chiefly applicable to the limbs, as about the head and trunk the irrigation is somewhat inconvenient." Borax is highly recommended (in doses of from thirty to sixty grains) in functional epilepsy.

Thomas G. Read, D.M.D., Harv., L.D.S., England, says: "When properly made, a cap crown protects the tooth substance from the action of the contents of the oral cavity; if the band is well adjusted to the stump and corresponds with the alveolar margin and the porcelain is ground flush with the band, it is non-irritating to the surrounding parts; with a porcelain face the appearance is very life-like; the stump is greatly strengthened, the band forming a ferrule, and it is capable of being quickly constructed with little or no pain to the patient." Most failures in this kind of work are caused by hasty and imperfect manipulation of the operator. When properly adjusted a crown is natural in appearance and strong enough to resist the strain of mastication.

Dr. C. B. Hewitt, of Kansas City, seems to have been enduring an anguish of mind similar to that experienced by big sinners when awakened to danger ahead. In the *Western Dental Journal*,

[and quoted in this ITEMS], the doctor, as if suddenly brought to a realizing sense of the hopelessness of his personal condition, and to the wickedness of the profession—for, as will be seen, he uses the plural “we”—asks this momentous question: “What shall we do to be saved?” We can imagine the agony of soul that inspired this pathetic exclamation, my dear boy, and hopefully implore you, and those for whom you intercede, to forsake your sins and pray that the good Lord forgive them. When, doctor, you become reasonably sure that your personal salvation is assured, plead for the profession. If prayer don’t save you, doctor, your “jig is up.”

Professor Koch’s consumption cure is receiving respectful attention by those who shape professional opinion in the Old World. The German Government proposes to aid the professor in perfecting his new cure—the Emperor having recommended that five hundred thousand marks be donated to him for his services in the cause of suffering humanity. The Prussian Diet will be asked to establish a bacteriological laboratory, over which the professor will preside. The professor declares that he does not desire to derive any material personal advantage from his discovery, and that he will publish his method for the benefit of humanity. We cannot overestimate the importance of this discovery, if effective, and the blessings it will confer on untold thousands.

“I was in a dentist’s office yesterday,” says Ben Abou, in *The Press*, of New York City, of the 11th ultimo, “talking with the chief operator, when a stylishly-dressed woman came in, bowed to him and passed on to the room of another operator, leaving behind her a strong odor of whisky. It was so strong, in fact, that when I made an expression which indicated my perception of it, my companion said: ‘Oh, that’s nothing. It happens every day and several times a day. The lady has come for an operation on her teeth, and she has taken a big drink of liquor to partly deaden the nerves and enable her to endure the pain. I think seven out of ten women do the same thing. We even keep a little brandy and whisky in the office to stimulate patients who get faint in the dental chair.’” It might be interesting to know a little of the history of this “stylishly-dressed woman,” also the moral character of the *lady* patients visiting this dental office, “seven out of ten of whom drink liquor to deaden the nerves to enable them to endure,” etc. But what ought to be said of a dentist who “keeps a little brandy and whisky to stimulate his patients with?” Trot out the name of this gentleman, “Ben Abou”—the public should be able to locate him.

Dr. Wm. E. Blackeney, New York.

AN ALABAMA EDITOR has lately become violently insane from cigaret smoking, and has been removed to the State Insane Asylum.

—*Exchange.*

THE MAINE DENTISTS are now clamoring for protective legislation in the shape of a registration bill. The old custom of pulling children's teeth with a waxed end will soon be contrary to law.

—*Richmond Bee (Lewiston, Me.) Journal.*

J. H. DEWOLF, M.D., writing me, says, among other things: "I am sorry your journal is not a medical journal; it seems to me too good to be simply a dental journal."

BOERICKE & TAFEL'S SUCCUS CALENDULE applied to a wounded pulp soothes and quiets it nicely, thus enabling us to prepare it successfully for capping, if pressure is avoided. The pulp, uncovered by excavating, treated with this preparation, promises a rapid recovery.

—*F. I. Sumner, Norwich, N. Y.*

DR. GEO. M. BEARD says we do not need to practice medicine long to learn that men die who might just as well live, if they resolved to live; and that myriads who are invalids could become strong if they had the native or acquired will to vow they would do so.

At a meeting of the students in attendance on the lectures at the Royal College of Dental Surgeons in Toronto, the following resolution was unanimously adopted:

Resolved, That the students in attendance at this college, recognize the literary and educational merits of the dental "ITEMS OF INTEREST," and desire to thank the publishers of the magazine for the interest and generosity displayed toward the students by providing for their use, throughout the term, copies of the journal.

That the secretary be instructed to forward to the publishers, copies of this resolution.

—*H. G. Lake, Secretary.*

A NEW YORK NEWSPAPER mentions a case of suicide where the victim "jumped in the Niagara." To make that expression correct, the person must already have been in the Niagara; otherwise he jumped *into* the river. Jumping "in" deep water is a prerogative of the fishes. The writer who tells of jumping "in" a river is the one who speaks of moving "on" a farm. If the person is on the farm to begin with, he can move about "on" it; but coming from outside he moves onto the farm. The "to" is needed with the "on" exactly as with the "in" in the other case, to indicate tendency toward. *Onto* is given in Webster as "colloquial," but it deserves precisely the same standing as *into*, to which it is perfectly analogous.

The British Journal of Dental Science asked, "What would have happened if Wellington had been suffering from toothache at Waterloo?"

During the recent series of performances at Oberammergau, we read, this accident did befall Josef Mayer, the player of Christus. Herr Mayer has devoted his life and has been specially trained for this one part, which he has brought almost to perfection. The mere study of his face is said to be of absorbing interest, and no doubt he is in a great measure the attraction which draws the many from far-off lands to this little Bavarian village to witness this play. Judge, then, the disappointment when they learned Mayer was in bed with intolerable toothache and a face hideously swollen. Seeing this kind of thing is among preventable ills, public men especially, such as actors, singers, etc., certainly are unwise not to take the needed precautions. In these days of grandmotherly legislation, we could almost wish these precautions should be obligatory to all public men, for their own sake and the public's.

Talking about distinguished dentists, reminds us that quite a number like to live in distinguished houses. Dr. Bonwill, of "electric mallet" fame, lives in Philadelphia, in what was General Grant's house, the acquisition of which is thought by some of his fellow "Yanks" to be a proof of quite superfine "cuteness." In years gone by, Mr. Cronin occupied the house in Holles street in which Byron once lived. Ill health has unfortunately compelled Mr. Cronin to give up practice, and the house is demolished, to make room for a draper's "extension of premises." Old Mr. Merryweather did, and his successor, Mr. Dewes, does, occupy the house in Brook street, where once on a time Handel lived. At Liverpool, Messrs. Rowston & Matthews practice in the house in which Mr. Gladstone was born; the bed-room being now an operating-room; indeed one lady is said to have pointed out the actual position of the bed. Ladies are always fond of details; how they get hold of them goodness only knows.

The Sanitarian says: An offensive odor of the breath, caused by bad teeth or other causes, may be overcome, or at least greatly abated, by the habitual use of listerine. Add a teaspoonful to a tumblerful of water for a mouth-wash and gargle, and if a little is swallowed so much the better. Indeed, a bad breath is not unfrequently caused by the gaseous eructations of indigestion, and for this also listerine is an excellent remedy, in doses of twenty to thirty drops in a little water.

OUR QUESTION BOX.

WITH REPLIES FROM OUR BEST AUTHORITIES ON DENTISTRY.

Address all questions for this department to DR. E. N. FRANCIS, UVALDE, TEXAS.

Question 7. *A little Miss of ten summers has a central broken off even with the gum—the pulp has been removed. Is this a suitable case for a crown?*

Yes.

J. H. Collins, Granville, N. Y.

If the apex of the fang is perfect I would answer, yes.

Wm. H. Cooke, D.D.S., Denton, Tex.

In my mind a porcelain crown is eminently indicated.

T. S. Cartwright, Van Alstyne, Tex.

It depends on circumstances.

F. T. Bell, Aurora, Ill.

I would fill root with gold.

J. L. Fogg, Barnesville, N. Y.

With proper treatment it is a suitable base for crown.

Geo. P. Mann, Waco, Tex.

I do not belong to the crown craze—for the young at least. Would extract the root and allow the space to be filled by a natural process. A Miss of ten summers will not miss it at sweet sixteen. Conservatism, and not empiricism, to my mind is best.

P. A. Bainbridge, M.D.D., Little Rock, Ark.

This is an opportunity for porcelain crown, without band. I would use my new milled pin crown, and attach with my new asbestos cement—not being so liable to crumble. Any gold showing inside or out, in such a case, is a disgrace to the tinker that does it.

E. P. Brown, 716 Fifth Avenue, New York.

Crown the tooth.

J. Campbell, Bloomington, Ill.

Most assuredly!

C. B. Baker, Bridgeport, Conn.

You can either use a Logan crown successfully, or, after removing the nerve and cleansing thoroughly, you can build up with gold, making a very handsome piece of work—something that would be a fine ad. for you. In either case the root must be sound and in good condition.

Dr. John Norris, Stephenville, Tex.

By all means I should crown the broken incisor.

W. H. Colgrave, D.D.S., Johnstown, N. Y.

It is.

A. A. Cook, D.D.S., Utica, N. Y.

The answer would be yes, or no, according to conditions and circumstances. The development of the "little Miss," and of the tooth itself, would be factors in making up a decision, as well as her idiosyncracies, temperament, etc., and whether the parts surrounding the tooth had been more or less injured by the force which broke the central "off even with the gum."

Chas. C. Baker, Meriden, Conn.

I should certainly consider it suitable for a crown.

J. P. Collum, Midland, Tex.

If the irritation has subsided, no abscess forms, and no vertical fracture of root, it is a suitable case for a crown (pivot tooth).

Francis A. Chicherio, D.D.S., Brooklyn, N. Y.

Question 8. *If you advise crowning, what style of crown would you use, and how attach?*

Should use porcelain crown, and because I have a supply on hand—should use the crown with wooden pivot, not, however, claiming it to be best. Should use wood pivot for attachment and *nothing else*, as I have tried to use cement repeatedly to fill up and make a more perfect joint but have always failed. Grind off roots till you make as near a perfect joint as possible, then press home crown to position. I do so little work of this kind I am not an adept in the operation.

J. P. Collum, Midland, Tex.

Would use Logan crown, with gold band,

Wm. H. Cooke, D.D.S., Denton, Tex.

A Logan crown would be my favorite, attached with cement.

T. S. Cartwright, Van Alstyne, Tex.

If suitable, crown with plate tooth backed up with gold, or Logan crown, with band, attached with oxyphosphate.

F. T. Bell, Aurora, Ill.

Let filling lap well over root at gum, so as to prevent decay. Ream out and put on Logan crown.

J. L. Fogg, Barnesville, N. Y.

I should use a Logan crown. I have just such a case that I crowned five years ago, and it is doing well now.

Geo. P. Mann, Waco, Tex.

Style of crown should be governed by the condition of the root; possibly a Logan crown if the bite is not to close; if so, and I think best, would band the root with gold, and fit to it a gold backed crown.

J. Campbell, Bloomington, Ill.

A Richmond crown. Would allow the band to extend only three-quarters around root, leaving the space in front to keep gold out of sight. Attach with just the right amount of gutta-percha. If the crown did not go to place, should apply heat externally. If pulp canal were unusually large would use a Logan crown, and base-plate gutta-percha.

C. B. Baker, Bridgeport, Conn.

If I used crown in case mentioned, would use either Welch's phosphate of zinc or Dawson's mineral cement, both of which you will find good and durable.

Dr. J. Norris, Stephenville, Tex.

If there is not too much strain on the tooth, I should set a Logan crown with Welch's cement. If it is a close bite and great strain on the tooth, I should use a band around the root—something like the Richmond crown. In both cases taking great care not to press the pin or cement through the foramen, as at that tender age the roots are not fully developed.

W. H. Colgrave, D.D.S., Johnstown, N. Y.

I prefer a platina and iridium pin for the canal; a gold collar to fit around the root and beveled on the labial surface beyond the free margin of the gum; a gold plate soldered on the beveled surface of the collar makes a cap for the end of the root. Adjust the cap on the root, select a suitable plain plate tooth and back it with gold, fitting it on the cap, and attach it with strong wax. Remove the tooth and cap, invest and unite with solder; attach to the root with oxyphosphate of zinc.

A. A. Cooke, D.D.S., Utica, N. Y.

Logan, attached with oxyphosphate. *J. H. Collins, Granville, N. Y.*

I would advise a gold cap crown—known in some circles as the Richmond crown, believing it far preferable to any other variety.

Chas. C. Baker, Meriden, Conn.

Richmond crown in my judgment would be the best, as you have a band encircling the root. You are aware that in a child of that age the root is short and the apical foramen is large. I would attach with oxyphosphate cement, first passing a piece of gutta-percha to apical foramen to prevent the cement passing through, which might set up a serious irritation. It is difficult to treat children's teeth of that age, as they are restless and afraid of being hurt.

Francis A. Chicherio, D.D.S., Brooklyn, N. Y.

The Logan crown seems to have the preference, probably from being in use longer than some others. The "old-fashioned" crown, with its wooden pivot, stood the test of time in a remarkable manner, and cases of thirty and forty years standing are often "crowning" monuments of success.

When we discover an insoluble cement, or can protect the excellent ones we already have, from the action of saliva, without the use of unsightly bands and caps, we will have a crown anchorage that will defy the past with its records of artistic and standing crown attachments.

E. N. Francis.

I wish to take off my hat to the brother who told me through the "ITEMS" to soap the holes in my rubber-dam when my teeth were close together. *Dr. Ernest Murray, Boston, Mass.*

Please tell me how to get a satisfactory wearing plate for a mouth that is as follows: In form regular; size, medium; thick, heavy ridge bearings, all outward; regular hardness. I have taken several impressions, and made plates that seem to do well for a day or two, but from that time on cannot be worn; the plate seems to fail in suction, and loose fitting seems to cause nausea and uneasiness, so that it cannot be worn.

A. D. H. Newport, Ark., Nov. 14, 1890.

What is the best thing to do when the gums have receded from the teeth and exposed roots are sensitive?

J. J. Brown, Macon City, Mo.

What is the best method of removing plaster from a plate that has remained in the vulcanizer over night, after vulcanizing?

E. H. Hickman.

For Our Patients.

SHORTM'Z KWESTIONZ.

[When r does not precede a sounded vowel in the same syllable, it is a vowel, pronounced er.]

Yung Shortm, he haz much to lrn,
 And tho he'z round and fat,
 He stutrz to evry thing he sēz,
 And points and sez : " Whot's that ? "
 The trēz, the gras, the stiks, the stōnz,
 The hors, the dog, the kat,
 Tha ol ar wundrz ov the wrld,
 And so he asks : " Whot's that ? "

Yung Shortm sits upon my ne,
 And in my nolej basks ;
 In my omnishent wisdum I
 Kan ansr ol he asks.
 He thinks the fount uv lrning springs
 From just benēth my hat ;
 He kumz rit to the fountin-hed
 And asks and asks : " Whot's that ? "

We ol r Shortm'z larjr grōn
 Who rōm with kurius ī,
 And when we sēs to sa : " Whot's that ? "
 Why, then it's tīm to di.
 Līf's bafling, endles misteri—
 We wundr much tharat ;
 Befor the ridl ov the wrld
 We only sa : " Whot's that ? "

The sajz ov the eldr wrld,
 The thinkrz ov to-da,
 Ol ask yung Shortm'z kwestion in
 The sām old kurius wa.
 A milyun wrlds whrl round thar vū ;
 Tha wundr much tharat ;
 Tha stare in the emensitiz
 And only ask : " Whot's that ? "

The mīty serial gōz on
 With wundrz manifold ;
 The stori ov the univr̄s
 Wil nevr ol be told ;
 And throo the grāt, eternal yērz
 We'l wundr much tharat,
 Forevr and forevr ask :
 " Whot's that ? Whot's that ? Whot's that ? "

ALL ABOUT AN ACHING TOOTH.

[Written expressly for the ITEMS OF INTEREST.]

"It is a good thing to laugh, and if a straw is used to tickle a man, it is an instrument of happiness."—*Dryden*.

A shabbily-dressed old farmer, accompanied by his daughter, a tall, uncouth young woman, recently called on a New York dentist, when the following conversation took place :

"Dentist," said the old man, "I want yer to pull a tooth fur my darter. She ain't ett enuff to keep a kitten alive fur—lem me see? How long is it, Nance, fur Iacterly forgit?"

"Not sen the old woman"—her mother—"got kick'd by the new hoss," she sniveled, "and that wuz the nite Zeke traded off the heffer."

"Oh, yes. I remember," exclaimed the old man, "'twas two weeks ago last Thursday, 'cause Deacon Grunter kall'd that nite to borrer a little wire to ring his pigs' snoots with. He sed the pesky things torn up most all his garden sass, an broke down a bran new tree he just sot out. You wuz most crazy then, Nance, and acterly, dentist, I tho't the gal wuz goe'n to looze her sentzes."

"That would be a terrible loss," said the dentist, with a suppressed smile; "but come," he continued, motioning the girl to the dental chair, "take this seat, and I will see that you do not run any more such fearful risks."

"It'll hurt oreful, 'cause Aunt Sally sed so," she whined.

"Gosh darn the hurt," said the old man, "didn't I hev a tooth out that the dentist sed had roots on it as big as a hosses?"

"Spozen you did—you told the old woman that you tho't your hed wuz come'n kleen off afore the dentist got haff done; so thar, now," she said, sobbing violently.

"What of that, Nance, 'tisn't likely you've got a tooth so pesky big as your dad's wuz—and—"

"Well," interposed the dentist, "make up your mind quickly what you intend to do, as time with me is money."

"What do you ax fur pull'n out teeth?" inquired the old man, nervously.

"Half a dollar and upward."

"Do you hear that, Nance, and it cost nigh onter a dollar to kum to York and git hum agin! Peers to me, you York dentists are make'n forten's, fur out our way they don't ax but a quarter."

"Why, then, did you not patronize your home dentist?"

"Why," said he, pettishly, "the gal has been pesker'n me and the old woman fur, I don't know how long, to let her kum to the city;

and when the darn'd tooth got to ake'n, noth'n would do but she must kum and have it tuck out in York stile." Pausing a moment, he added with a deep drawn sigh : "but gals nower days don't know noth'n 'bout save'n, and all sich things."

"Come, now," said the dentist, addressing the young woman, with a little irritation in his manner, "decide at once what you intend to do, for I can't lose any more time."

"I know it's got roots like a hosses, fur Aunt Sally sed so," she replied, through her tears.

"Put yer hat on and we'll go hum," shouted the old man, angrily. "I'm acterly 'shamed on you, make'n sich a dod-rotted fool of yourself, and me, too ; a kleen dollar gone, by gosh, but what do you kare? Now, when you hav the critter tuck out, it'll be on the old humspun stile."

After this little speech the two departed, leaving the doctor with ample time to reflect on the painful uncertainty of all earthly things, and especially of prospective tooth-drawing fees.

I have had curious evidence recently of an unsuspected danger lurking in anesthetics. Not many years ago a club member in this town astonished and shocked his fellows by most unseemly conduct in the club-house on a semi-public occasion. He refused to make an official explanation, and was moderately disciplined. In the end he severed his connection with the club. To me he had long before explained that his strange conduct was the result of his having taken an anesthetic at his dentist's. I believed him, because I had seen him only a few hours before the occurrence, and he left me to visit the dentist. Probably no one else accepted his explanation. The whole affair had nearly passed from my mind when I chanced to visit, with an acquaintance, a place that I had visited with the man in question on the day of his unfortunate performance. I told the story to my companion, and he at once expressed entire confidence in the explanation. An almost exactly similar experience had come within his own observation, and he knew positively that the true explanation was that given by my other acquaintance. The philosophy of the thing is this : When an anesthetic is inhaled, part of it is absorbed by the mucus of the throat, and in this vehicle finds its way to the stomach. There it may remain for several hours, till the gastric juices, awakened to activity by the approach of an accustomed meal hour, release the gas, and, joining with it, produce an effect on the stomachic nerves that, communicating with the brain, render the man for the time being an irresponsible maniac.

THE CONTRAST.—She timidly visited us at our office by appointment made by a fond and careful mother. With her spring suit and fresh complexion, how neat and pleasant she was to look at. We see health and perfection before us. She takes a seat in our chair, and, being close now, we can observe every lineament of grace and beauty. How neat and light her hair! We see at a glance that the best care is taken of it. Her eyes are clear and bright; her skin has that clean and healthy look only obtained by thorough cleansing and friction. Her little hands are quite clean; the nails are nicely trimmed and manicured. We take the mouth mirror, and, after explaining to allay her fears, we place it in her mouth and gently pass it back as we look directly at the teeth. Horrors! Here is the flaw in our ideal perfection; here is the soiled petal in this beautiful unfolding bud. Her teeth are decayed and covered with a scum of yellow and white viscid deposit—the remains of food—quite acid and giving out an abhorrent odor. She has come to us foul-mouthed. Had she been going to the dressmaker, she would have taken the precaution to have her under linen bear inspection; or to the bootmaker, the stockings would have been perfect; or had she expected the visit of the corn-doctor, the foot would have been scrupulously clean. But to the dentist—a man of refinement—she comes to him without cleaning even the remains of the last meal from her teeth. Though there is beauty without there is filth and rottenness within.

—*Southern Dental Journal.*

VERY FEW PEOPLE realize how much the dentist has done for mankind. To mention one thing only, the perfection to which the manufacture of false teeth has been carried has practically abolished old age—that is, old age in the sense that I used to know it. You see none of the helpless, mumbling old men and women that you formerly did. This is not because people do not attain the age their parents and grandparents reached, but because the dentist has prevented some of the most unpleasant consequences of advancing years. Men of seventy no longer either look or feel old because they are not deprived of nourishing food at the time when they need it most. Estimates have been made showing that the average length of life has been increased from four to six years by the general use of false teeth, and this does not appear in the least extravagant when one thinks of the difference in the nutriment accessible to one with a fine set of molars and one condemned to gum it through his declining years.

—*S. A. Binton, in St. Louis Democrat.*

Book Talk.

DENTAL ANATOMY. By G. V. Black, M.D., D.D.S. Octavo, illustrated, 153 pages. Published by The Wilmington Dental Manufacturing Company, Philadelphia. Price, \$2.50.

Students who rely on private instructions for preliminary instruction have little opportunity for becoming familiar with the specific anatomy of the teeth; and even in our colleges the descriptive anatomy of the teeth are not taught very definitely. Therefore both our colleges and our students will welcome this little book.

It is what the dental student needs for his studies, whether he be under college or private instruction; and very appropriately supplements the modeling class instruction now given in the Pennsylvania College of Dental Surgery. The author has adopted a dental nomenclature which can hardly be improved. It is simple, comprehensive and appropriate.

The table of measurements is simply exhaustive, giving the student the minimum, maximum and other average length and mesio-dental and labio-lingual diameters of the teeth. The minute description of the individual teeth is not very complete morphologically, but embraces some interesting embryological and histological facts. For instance, in speaking of the various points of development of the first molar, he says:

In their origin, each distinct portion begins its calcification as a separate piece, plate or cusp, and moves apart from the others as growth proceeds, until the proper dimensions of the occluding surface is attained; then they coalesce on the lines marked by these grooves, and thus complete the occluding surface. When the union has been completed nothing but fine lines remain, which, on any plain parts, are often quickly obliterated by wear. But on parts meeting at an angle, forming a sulcus, as in the buccal and disto-lingual grooves, there is usually a sharp groove; and yet at any point where the union has been imperfect, there is a fissure.

The plates illustrating the pulp chambers and root canals of teeth beautifully designate the important part played by the development of secondary dentine, showing conclusively the utility of this recuperative energy, years of functional activity being added to the molars by this contraction in the size of the pulp chamber.

From the description given of the deciduous and permanent teeth, the student can discriminate between individual teeth of the two sets, and between normal and abnormal growths.

In the arrangement of the teeth and their occlusion, the author

of this little volume gives some valuable information for the student of both the operative and prosthetic department.

The book is well worth possessing, and no student should feel his library complete without it. *C. N. Peirce.*

PROF. J. E. GARRETSON'S ORAL SURGERY.—This treatise has been so enlarged and perfected that those who are familiar with only his previous editions would hardly know this fifth edition. It contains 1364 pages, and there is not a waste sentence in it.

Happening into his office one day while he was preparing his new edition, we incidentally made a remark, that he thought pertinent to his purpose.

"Excuse me a moment," said he; and opening his oral surgery on his desk, he said, as he turned over its leaves, already interlarded with hundreds of manuscript pages: "Will you be kind enough to repeat that thought you gave me just now?"

"Why," we said, "is that the way you make your book?"

"Oh," said he, "wherever I find an idea useful and practical to my work, I am immediately anxious to interweave it in its proper place in my book. The author that thinks more of originality than he does of value, perspicuity and fullness, is stupid. My thoughts, my reading, and my conversation are continually on making my book in every way complete."

The character of this new volume shows the author to be a clear thinker, a close observer, and a painstaking student. These qualities added to his long experience, his public service and his exceptional opportunities for knowledge, skill and practical familiarity with his subject, give us a book of rare merit.

DR. FARRAR'S WORK ON REGULATING—Attention is called to a work in preparation, a portion of the advanced sheets of which I have had the greatest pleasure in reading. I allude to Dr. Farrar's work on Regulating. In my opinion, dentistry has never yet produced a work equal to it, and it will be many years before anything like it can be accomplished. It shows what one devoted man can do. He has given the last six years of his life to the subject, day and night, and the results, when issued, will be of incalculable benefit to the profession. Every dentist should have a copy of it without regard to cost. *Dr. Truman.*

PROGRESSIVE EXERCISES IN PRACTICAL CHEMISTRY, by Leffman & Beam, is a little book of much value. We are not informed of the price, but have been really interested in running over the pages. It is published by P. Blakiston, Son & Co., Philadelphia.

Current Notes and Items.

THE English system of spelling (I protest against its being called *orthography*) is a labyrinth, a chaos, an absurdity—a disgrace to our age and nation.

Sir C. E. Trevelyan.

THE USE OF MENTHOL as an antiseptic as well as an anodyne appears to be increasing, and from the fact that it is probably the least injurious of all known antiseptics, it is likely to come still more into use as such. It is especially useful in dental practice from its specific action in neuralgia.

—The British Journal of Dental Science.

DR. COOK says, in casting a plaster model where you take a bite and desire to get a model very quickly: First, cast one side, turn the impression over, place a double piece of bibulous paper over the plaster that is to form the tail-piece and cast the other side. It comes apart without trouble, doing away with shellac and oil, and is done with no mixing of plaster.

“ Prices of false teeth have gone up recently,” said a prominent dentist, “ but the rise was caused solely by the scarcity of platina, of which metal the little pins are made with which to fasten each tooth to the plate. The rise is not at all on account of the McKinley bill. All the platina of commerce comes from the Russian mines in the Ural mountains, and the supply is hardly sufficient for the demand at present. The consumption of platina has greatly increased since the electric companies began its use. The tiny, hairlike loop in each incandescent light is made of platina. The price has gone up to about \$20 an ounce.”

—Eagle, Grand Rapids, Mich.

A SECRET REVEALED.—A suspicious character is retailing in Ontario a local anesthetic at five and ten dollars. He makes the purchasers sign an agreement to forfeit \$100 if they divulge the secret. He then goes out and sells it to any other person who will buy it. Our subscribers can save their money, as we herewith give it to them: Chloral hydrate, 26 grains; fluid extract belladonna, 10 drops; sulphate atropia, 1 grain; carbolic acid, 8 drops; muriate cocaine, 18 grains; saturated solution boracic acid, 8 drams. Dissolve well. Then filter.

—Dominion Dental Journal.

THOMAS FLETCHER, F. C. S., of Warrington, England, who long since gave up the practice of dentistry, still retains his interest in the profession, and has recently strengthened that interest by presenting to the Manchester Dental School prizes to the value of £20, to be competed for annually, for five years. The prizes are to be awarded for proficiency in operative dentistry.

—Dental Advertiser.

DR. CURTIS, OF SYRACUSE, N. Y., gave a clinic, at the Medical Congress, Berlin, demonstrating local anesthetic properties of nitrous oxide gas applied by projecting a jet of the compressed gas from an ordinary cylinder through a very fine mouth-piece or nozzle, on the gum over the roots of the tooth to be extracted or excavated. Dr. Curtis is very enthusiastic, and quotes many cases of successful local anesthesia by this method.

ANNIE FELTON REYNOLDS has the honor of being the first woman graduate from a Massachusetts dental college. She received her degree from the Boston Dental College, June 19, 1890. Either Miss Reynolds must have been unusually bright, or the male students unusually dull, as she received first prizes for senior honors.

—Dental Advertiser.

IT IS REPORTED from Newport, Ky., that a company has just been formed there, with a capital of \$250,000, to manufacture aluminum at a nominal price. The process has been patented. It involves the use of calcium fluoride for a flux, and a little calcium carbonate in a jacketed furnace. It required about thirty-six hours to make the first slab. The metal can be produced at less than ten cents a pound.

DR. ADAMS says: A short time ago I was treating a case of pyorrhea alveolaris, and I wanted the patient to use a syringe at home to wash the pockets. I went to a rubber-store and bought a small rubber ball that cost three cents, then took a glass tube from a medicine dropper, inserted it into the ball after enlarging the air-hole, and, you see, I had a perfect syringe.

DR. MORRISON says: The most satisfactory form of sectional dentures (bridge-work) secured by crowns are made of gold and platina, "I" or "L" bar, each end soldered to the crown, and then a correct articulation obtained and rubber teeth used; the space between the crowns entirely filled with rubber, resting on the gum, enveloping the gold and platina bar, and articulating against the occluding teeth. I have used this form for many years.

English spelling is a national misfortune.

Sir C. E. Trevelyan.

AT THE annual meeting of the Odontographic Society, of Chicago, held December 8th, 1890, the following officers were elected for the ensuing year: D. C. Bacon, *President*; H. R. Sackett, *Vice-President*; R. B. Tuller, *Recording Secretary*; T. A. Broadbent, *Corresponding Secretary*; E. Noyes, *Treasurer*.

T. A. Broadbent, Cor. Sec.

MISSOURI STATE DENTAL ASSOCIATION will hold the next meeting at Louisiana, Mo., July 7th and 10th, inclusive, 1891. That all members of the profession in the State may be supplied with the program, it is necessary for their names and addresses to be on our mailing list. Therefore, I ask all who may desire to receive the announcements, to send in the required address. As many new dentists are coming into the State, they are especially requested to comply to the above request.

John G. Harper, Rec. Sec., 800 Pine Street, St. Louis, Mo.

DR. GEO. W. MELOTTE says, to melt platina make a cup of charcoal. Make a cavity in another piece of charcoal, but cut a shallow groove leading out from the cavity. Place in the first cup three or four pennyweights of plantina scraps or teeth-pins. Cover them with the second piece of coal, so placed that its cup shall be over the other cup. Attach a tube from a nitrous oxide gas cylinder to the mouth-piece of a Melotte blow-pipe, and direct the compound gas-flame through the groove in the charcoal onto the platina. When this is at the point of fusion, put it quickly under blows of a hammer to condense the mass. Repeat the process until the piece is suitably shaped, and then pass it through the rolls for use.

PROF. J. TAFT said, in speaking before the Mississippi Valley Association, he had never used amalgam as a filling material. Oxyphosphate acts differently in different hands. He had seen an oxyphosphate filling last eighteen years. It should not be used close to the gum; or in proximal positions. Is one of the very best materials for porcelain inlays. A *good* oxyphosphate will last as long as an *ordinary* gold filling. Much is due to the manner in which it is mixed. It should be thoroughly mixed. Some will granulate when used immediately, but if it is worked between the fingers it becomes quite plastic, and in that condition is better and easier used. Heat accelerates while cold retards.

—Southern Journal.

Editorial.

WHAT SHALL BE OUR FUTURE?

The future, at best, is uncertain, and yet we can do much to direct our course; for very much depends on ourselves to say what it shall be. Our future is not a course of chance—unless we call shiftlessness chance—waiting for something to turn up. Therefore, though our future cannot be a subject of unerring judgment, it may largely be determined by our own provident actions. Though a kind Providence shapes our way, rough hew it as we may, yet we must remember “Providence helps those who help themselves.” No one is left to struggle alone. If there is really struggling, we shall not be left to ourselves in the struggle.

If, therefore, we do attempt to devine our future, to do so with any degree of assurance, we must not suppose Providence is the only force in the calculation; we are ourself quite as important a factor in the problem, and let us remember, it is not what we wish, or even plan and purpose, but what we are and do. We may cry to Providence till doomsday to do for us what we should do for ourselves. Providence is deaf if we will not do our best to answer our own prayers.

Few appreciate the responsibilities, possibilities and worth of time. But, probably, there will be no part of all eternity so important to us as the brief period we spend on this earth. Yet most of us act as though time was a trifle which may be spent in trifling. In fact, we spend so much of it foolishly, idly, frivolously, we are hardly prepared for anything serious, weighty, responsible. When we do find ourselves industrious, much of our labor is for selfish purposes. The great interests of humanity, or even of our own higher interests, seldom occupy our serious attention. As for making sacrifices for others, or submitting to discipline for our own good, it simply looks foolish, feminine, childish.

Yet the sweets of rest come through hard work; great triumphs come through severe struggles; and our most satisfying and lasting

enjoyments come through self-sacrifices, philanthropy and a consciousness of usefulness.

We forget we are children preparing for an eternal manhood; children at school learning the lessons our Master is giving us. Are we good children, and scholars, and workmen, doing our best, that we may grow up into our best manhood, ready for all the possibilities of future surroundings and opportunities? Or are we dilatory, unmanageable, incorrigible, wasting time and talent in nonsense and foolish indulgences?

THE NEW YEAR.

And now comes the New Year. To us who are older, how fast they come; to the younger, how far they are apart; but to all they are epochs; to some, the harbingers of pleasure and a new life; to others, the sad blight of hope and joy.

But this is no time for gloom or gloomy imaginings. In spite of anything in the past, the New Year shall have its new impulses; its new plans, and its new inspirations, aspirations, etc. Even if there have been defeats and troubles and sacrifices, these shall be stepping-stones to better our future path.

How true, that it is only a small portion of our best-laid plans that succeed. "Failure! failure! failure!" is written on so many of our pet endeavors the heart becomes sick and the spirits faint with trying. We are hardly on our feet before some one knocks us down; and if we are left standing, it is often only to the folly of our effort.

But quite as true is it, that without these defeats and losses, and severe struggles and sacrifices—without these enemies in the path to teach us how to fight; to give us strength and skill through struggle; to give us discipline and boldness through hardships, and to give us wisdom and discretion through humiliations and reverses—few of us would become strong and finally successful. So here goes a hearty plunge into the fresh, swift current of the New Year. May it wash us of all filth; purge us of all disease; separate us of all evil, and prepare us for a strong swim for success.

THE CENTRAL DENTAL ASSOCIATION OF NORTHERN NEW JERSEY AND PATENTS.

This society goes heavy on patents. In fact, everything it does it does with all its might—no half-way measures with them.

We once heard a man say he was always opposed to patents until he had one himself, and then he was always opposed to any one having one that interfered with his. And well he might, for he put ten thousand dollars in bank that never would have been there without it.

Hear the language of this dignified body :

Methods and processes of treatment of and operation on the human body should never be the subject of monopoly. Every such invention and discovery belongs of right to humanity. (The inventor or discoverer is sufficiently rewarded by the consciousness of the service rendered to his fellowmen.) The ethical codes of medicine and dentistry alike oppose the monopoly of anything that tends to prolong life or relieve suffering. The signers express a hope that some measure may be enacted prohibiting, in future, the granting or issue of letters patent for any invention or discovery, or any improvement thereof, of any method or process in operative dentistry, and providing some expeditious method by which any such patent hereafter inadvertently granted may, by the decree of some competent court, be annulled and cancelled.

One of the members of this honorable body wrote us the other day : "I wish you would say a good word for Dr. ——'s patent; I am somewhat interested in it. Of course, you will not mention my name."

The joke, if there can be any joke in such proceedings, is that they invited Dr. Bonwill there, the evening this action was taken, to read a paper. This champion of patents gave them a regular broadside for three-quarters of an hour.

One of the veterans in the Soldiers' Home at Erie, Pennsylvania, has had a remarkable experience. At the battle of Winchester he was wounded in the neck and left on the field by his comrades, who supposed him to be dead. Falling into the hands of the rebels, who discovered he was still alive, he was taken to a hospital, and when he recovered sufficiently to be able to speak, he could remember nothing except that his name was Henry. He was exchanged, and finally found his way into the institution of which he is now an

inmate; but the bullet which well-nigh ended his life had effectually obliterated from his mind all traces of the battle and his former life. While visiting in Altoona he met a familiar face one day, which, by the law of association, carried his mind back to the battle of Winchester, and then for the first time he recollected the beginning of the battle, and the fact that he belonged to Company K, Eighty-fourth Pennsylvania Volunteers, and that his name was Henry Leighton. This psychological phenomenon may furnish valuable material to those who are interested in such studies.

A dispatch from Cleveland, Ohio, says that heretofore the lowest price to the public on aluminum in small lots has been \$2.50 per pound. The Cowles Electric Smelting Aluminum Company of that city, the largest manufacturers of aluminum in the world, issued a circular to the trade recently, cutting this price to \$1 per pound for the aluminum contained in any of their alloys. Five years ago, when Cowels' aluminum was first offered for sale, the current price of the metal was \$20 per pound, and little was obtainable, even at that figure, and this without any guarantee of chemical purity. At \$1 per pound aluminum will become a serious competitor with both nickel and tin. At 50 cents pure aluminum would become a formidable competitor with copper.

TOO MANY TEETH ARE SACRIFICED IN REGULATING.—Teeth may be very irregular and crowded, and not indicate the extraction of a single tooth. Carry them out and thus increase the size of the arch, and you often have sufficient space for all. If you will critically examine irregular teeth, you will find most sets describe a too narrow arch, and that this is the main cause of their crowded and irregular condition.

While regulating teeth we should keep careful observation of the occlusion. Sometimes it is impossible to move a tooth, when finally we find the only difficulty is in the occlusion; and sometimes we can save ourselves much time and labor by bringing to our help a favorable bite. This remark is as true of the molars and bicuspids as of the front teeth.

BE TEACHERS.

How few seem to understand that the very term doctor means teacher, so that, by assuming the title of doctor, we take the prerogative and responsibility of teaching the people.

And this may be done without offensive ostentation, or even formal lecturing. The most appropriate place for dental instruction is in the dental office. No patient entering should depart without being made wiser. The more we instruct our patients—of course, in a familiar, inoffensive way—the more good we shall do them, and through them to the general community, and the more popular we shall become as a doctor in its best sense. The best advertising we ever done was a series of short articles, in the local press, on general dental subjects; and the most profitable families we have retained in our practice were those whose parents we had drawn to us by familiar instructions in our office.

IN EXTRACTING FOR REGULATING, too many forget that teeth are more easily moved forward than backward. It is difficult to move teeth backward, and when it is done they seem determined to resume their original places; but it is comparatively easy to move them forward, and they are seldom inclined to return to their former position. Dentists who have extracted a first molar, for instance to give more room to bicuspids and cuspid, are astonished to find the vacancy remain, and the crowded condition of the teeth in front also. If the space made by the extracting is partially closed, it is mainly from the second molar moving forward.

MANIPULATING OXYPHOSPHATES.—Oxyphosphate should not be mixed very stiff, nor be allowed time to harden before being placed in position. It should be so soft as to stick to the walls of the cavity. This is a quality of a good cement that is not found in any metal filling, and is very desirable, for it makes the cavity absolutely water-tight. Another advantage of oxyphosphate is that, if inserted immediately after mixing, the acid, in this nascent state, penetrates the tubes of the dentine, closing against moisture and hardening this tissue. If you have not yet noticed this hardening,

drying, preserving quality of oxyphosphate, just fill a cavity where the dentine is quite soft, and in six months remove the filling, and see the changed condition of the walls and the foundation over the pulp. Another advantage of a rather thin phosphate, placed in the tooth cavity immediately after being mixed, is that, if it is quickly placed in position, and the surface left in final shape and not disturbed till it is hard, the surface will have a nice glassy finish, which will last a long time and resist moisture.

To express thoughts clearly in the fewest words is one of the prime qualities of a good style.

Dr. Atkinson swabs the cavity of a tooth with equal parts of creosote and oil of cloves before filling.

Tooth & Tooth is the name of a firm of London auctioneers. The Messrs. Teeth lately advertised a sale of American brushes.

We are informed we were in error in announcing in November that a third edition of Prof. Flagg's Quiz Questions on Dental Pathology and Therapeutics was contemplated.

The article on page 492, November number ITEMS OF INTEREST, is ascribed to Prof. Guilford by mistake. It was written as an editorial, and should have appeared as such.

Dr. Wm. E. Blakeney, of New York, will hereafter lend us his versatile pen for the ITEMS OF INTEREST. His "Items, with Comments" will give variety and interest.

The Maine dentists are applying to their Legislature for a Registry Act, by which all practicing in the State will be required to register in their respective counties. This seems nothing more than fair; and, if passed, should be thoroughly enforced.

If the wife spent daily as much foolishly as the husband does who smokes cigars, she would be called a spendthrift. If she accompanied him in the same habit, she would not be respected. Strange, what a difference there is in the standard of morals between the husband and wife. But should there be?

Miscellaneous.

FORTUNES IN SMALL INVENTIONS.

Frequently the newspapers take up the subject of inventions, and tell their readers how many have made fortunes out of small inventions. The Pittsburg *Dispatch* gave the other day a list of small things that have made their inventors wealthy. It commences with the pen for shading in different colors, which yields an income of \$200,000 per annum. The rubber tip at the end of lead pencils has already made \$100,000. A large fortune has been reaped by a miner who invented a metal rivet or eyelet at each end of the mouth of coat or trousers' pockets to resist the strain caused by the carriage of pieces of ore or heavy tools. In a recent legal action it transpired in evidence that the inventor of the metal plates used to protect the shoes and heels of shoes from wear, sold upward of 12,000,000 plates in 1879, and in 1887 the number reached 143,000,000, producing realized profits of \$1,250,000.

A still more useful invention is the "darning weaver," a device for repairing stockings, undergarments, etc., the sale of which is very large and increasing. As large a sum as was ever obtained for any invention was enjoyed by the inventor of the inverted glass bell to hang over gas to protect the ceilings from being blackened, and a scarcely less lucrative patent was that for simply putting emery powder on cloth. Frequently, time and circumstances are wanted before an invention is appreciated, but it will be seen that patience at times is well rewarded, for the inventor of the roller skate made over \$1,000,000, notwithstanding the fact that his patent had nearly expired before its value was ascertained.

The gimlet-pointed screw has produced more wealth than most silver mines, and the American who first thought of putting copper tips to children's shoes has realized a large fortune. Upward of \$10,000 a year was made by the inventor of the common needle-threader. To the foregoing might be added thousands of trifling but useful articles from which handsome incomes are derived, or for which large sums have been paid. Few inventions pay better than patented toys. That favorite toy, the return ball, a wooden ball with an elastic attached, yielded the patentee an income equal to \$50,000 a year, and an income of no less than \$75,000 fell to the patentee of the "dancing jimcrow."

The invention of "Pharaoh's serpent," a toy much in vogue some years ago, was the outcome of some chemical experiments,

and brought the inventor more than \$50,000. The sale of the little wooden figure, "John Gilpin," was incredibly large for many years, and a very ingenious toy, known as the "wheel of life," is said to have produced upward of \$100,000 profit to its inventor. One of the most successful of modern toys has been the "chameleon top," the sale of which has been enormous.

The field of invention is not only vast and varied, but is open to everybody, without respect to sex or age, station or means.

Scientific American.

KOCH'S METHOD AN OLD ONE.

Dr. George B. Bradley, of this city, contends that Prof. Koch has not discovered a new method of treating tuberculosis, as the public supposes. He says:

The problem at present demanding solution is how to destroy the tubercle bacillus without injuring the human body. Koch claims to have solved it by inoculating phthisical patients with a metallic salt. In this the professor is simply following up the experiments of other scientists and physicians in a search for effective bacillicide treatment. Already it has been ascertained that steam effectually destroys fresh tubercular sputum in fifteen minutes. Phenylacetic acid, phenylpropionic acid, and sulpho-carbolate of sodium, when injected with pure tubercular matter into animals, cause complete inhibition of the virus. Iodine, carbolic acid, and sulphate of quinine reduce the number of bacilli. The injection of antiseptic solutions into tubercular consolidations and cavities is already practiced. Permanganate of potassium, dilute solutions of iodine, carbolic acid, creosote, and iodoform are among the drugs selected. Hypodermic injections of preparations of eucalyptol turpentine and iodoform have been tried. Antiseptics by the stomach and by inhalation form part of the present treatment. It is, therefore, clear that the bacillicide treatment is not a new one, and that the method by which Koch proposes to apply bacillicides has already been practiced and encouraging results obtained.

—New York Press, November 9th, 1890.

REVELATIONS OF THE MICROSCOPE.

The revelations of the microscope of the existence of myriads of microbes in our bodies, as well as in all we eat and drink, has caused timid people much anxious wonderment as to why these creatures are not more injurious and destructive than they are. Writing in the *Speaker*, Sir Henry Roscoe explains how it is that even the deadliest of these microbes may be found in the mouth or other parts of the body, and yet their host be perfectly healthy. The question is not one of the mere presence of these organisms in the system, but entirely one as to whether they find their way into the blood. If they do not all is well; if they do, the most serious trouble will follow.

Working with the microscope in M. Pasteur's laboratory in Paris, a Russian physician, M. Metschinikoff, has been able to discover the secret of the impotence of the microbe to penetrate in the blood. These most recent investigations show that there are cells contained in the blood of all higher animals, termed phagocytes, and identical with the well-known white blood corpuscles, which are endowed with the power of independent motion, and not only wander inside but even make their way outside the tissue, and pursue, devour and digest any bacilli, whether poisonous or not, with which they come in contact. This is in reality the true battle of life, which, though hitherto unknown and unobserved, is constantly going on within the body.

These phagocytes, which are the watchful guardians of the body, attack and annihilate the bacilli before they can penetrate the blood tissues. So long as they remain on guard, the body is safe from attack, but should they from any cause relax their vigilance, the invading army of parasites would pass into the system and destroy life either by the numerous mechanical lesions which that noxious army would produce, or by the poison it would secrete. This apparently independent life of the cell within the organism is one of the most marvelous revelations of modern science, as well as a remarkable illustration of the extreme nicety of the balance of nature.

—*Newcastle (England) Chronicle.*

GRAVITATION OF LIQUIDS—AN INTERESTING EXPERIMENT.

An amusing trick can be performed with two wine glasses and a visiting card. Take two claret glasses of the same size, and fill one with claret quite to the brim, and the other with water. Cover the glass containing the water with the pasteboard card, and then ask if any one at the table can transfer the claret into the glass containing the water without pouring out or spilling the liquid in either glass. This appears quite impossible, but it may be easily accomplished by inverting the glass containing the water and placing it on the other glass. After the edges of the two glasses have been brought opposite one another, the card is slipped carefully to one side so as to open a small communication between the two glasses; this done, there immediately begins an exchange of the liquids, and it is observed that the claret is flowing in a gentle stream into the upper glass, the water descending through the small opening and displacing the claret. The claret soon begins to spread out in an even body over the water contained in the upper glass. This process continues until there is a complete interchange of the two liquids. Of course the explanation is simple enough. The water being a heavier liquid than the claret sinks into the lower glass, and the claret is forced up to fill the displacement of the water. It flows in a steady, clear-cut stream, and the effect as it rises through the water is very fine.

It is remarkable that in this experiment there is no observable intermixture of the liquids. The water contained in the lower glass

after the experiment is quite clear and transparent. It is also curious that the water in the upper glass passes the space between the rims of the glasses and enters the lower glass without any leakage whatever. This, however, is fully explained by the surface tension existing on the liquid at this point.

The card used in this experiment is about the thickness of an ordinary postal card. The experiment is easily performed, and is worthy of trying. The upper glass containing the water may be lifted and carried about while the card is attached, without holding it on with the hand, thus illustrating in a well-known way the effect of atmospheric pressure.

THE COMPASS IN THE WATCH.

A correspondent of the London *Truth* sends the following; "A few days ago I was standing by an American gentlemen, when I expressed a wish to known which point was the north. He at once pulled out his watch, looked at it, and pointed to the north. I asked him whether he had a compass attached to his watch. 'All watches,' he replied, 'are compasses.' Then he explained to me how this was. Point the hour hand to the sun, and the south is exactly half way between the hour and the figure XII, on the watch. For instance, suppose that it is 4 o'clock. Point the hand indicating 4 to the sun and II on the watch is exactly south. Suppose that it is 8 o'clock, point the hand indicating 8 to the sun, and the figure X on the watch is due south. My American friend was quiet surprised that I did not know this. Thinking that very possibly I was ignorant of a thing that every one else knew, and happening to meet Mr. Stanley, I asked that eminent traveler whether he was aware of this simple mode of discovering the points of the compass. He said that he had never heard of it. I presume, therefore, that the world is in the same state of ignorance. Amalfi is proud of having been the home of the inventor of the compass. I do not know what town boasts of my American friend as a citizen."

WATCHING THE CLOCK.

As the *Christian Union* says, there is a deal of common sense in this story lately told of Edison, whether he said it or not. A gentlemen went to the great electrician with his young son, who was about to begin work as office boy in a well-known business house. The father asked Edison for a motto which the boy might take to heart in his struggle for promotion and success. After a moment's pause, Edison said, laconically, "Never look at the clock!"

Edison meant, we take it, that the man who is constantly afraid he is going to work overtime or overhours doesn't stand a chance of competing with the man who clears up his desk, no matter how long it takes. The carpenter who drops his hammer, uplifted above his head, when the whistle blows, is likely to remain a second-class workman all his life. The carpenter who stays fifteen minutes to finish a "job" is working toward a shop of his own. We should work for our employer as though the work was our own.

ALUMINUM AS A BATTERY PLATE.—*To the Editor of the Scientific American*:—In your issue No. 17 of the last volume, you ask your readers to give their experience as to the fitness of aluminum plates for battery use. I have used one of my own construction, with bichromate of potash and sulphuric acid fluid. I was at the time experimenting to find a solder for aluminum, but failed. Making much use in my practice of electric and galvanic apparatus, when one day, using a one-cup Faradic battery, the carbon broke, and it occurred to me to try an aluminum plate, and it worked quite well, and I used it for about two years off and on. This was in the year 1874. The aluminum plate did show wear. May be, it was not quite pure, as at that time I had to pay a high price for every ounce I bought. *Ernest F. Hofmann, New York, N. Y.*

DEEP MINING.—The mine at St. Andre du Poirier, France, yearly produces 300,000 tons of coal. The mine is worked with two shafts, one 2,952 feet deep, and the other 3,083 feet. The latter shaft is now being deepened, and will soon touch the 4,000 foot level. A remarkable feature of this deep mine is the comparatively low temperature experienced, which seldom rises above 75° Fahr. In the gold and silver mines of the Pacific coast, at a depth of less than half that of the French coal mine, much difficulty is often experienced in keeping the temperature low enough to admit of working. In some levels of the Comstock lode the temperature rises as high as 120° Fahr.

IMPERMEABLE GLUE.—To make an impermeable glue, soak ordinary glue in water till it softens, and remove it before it has lost its primitive form. After this, dissolve it in linseed oil, over a slow fire, till it is brought to the consistence of a jelly. This glue may be used for joining any kinds of material. In addition to strength and hardness, it has the advantage of resisting the action of water.

—*Revue Industrielle.*

LOCAL ANESTHESIA.—Several months ago we referred to this subject, stating we had seen enough to justify us in believing there were harmless local obtundents that would enable us to extract teeth painlessly. We have received so many letters of inquiry, we will say: Write to Dr. F. W. Welch, Morristown, N. J.

THE CIGARET.—Plainfield, N. J., September 25th. The death of eight-year-old Willie Major, a farmer's son, from cigaret smoking, is reported from Bound Brook. The boy had for over three years been a victim to the habit.

HERNIA.—Dr. Stroup says he never failed to relieve any case of hernia, even after failure of taxis and other plans, by the following: Place a piece of absorbent cotton over the tumor, and saturate with ether. He says no operation for hernia will ever be needed when this plan is followed for sufficient time.

—*Medical Brief.*